

MAXI MANAGER II
DATA BASE MANAGEMENT SYSTEM

For
TRS-80 Models I, III and IV
Version D.0 (48K)
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Exador Inc.
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FOREWORD

Maxi Manager II is a single-file data base management system developed over a period of five years. Originally the idea for the software evolved from a personal need for a record keeping program which was neither limited in storage capacity by random access memory (RAM) nor hindered by the use of a single disk drive. My desire was to develop a record keeping system that was highly flexible. The system needed to be able to easily integrate data into letters, reports or labels, allow high speed access to any item within the data base, and allow for the addition or deletion of fields as needs changed. The system also had to support hard disk drives as well as permit usage of 5" and 8" single and double sided disk drives in any combination. With these objectives in mind, the Maxi Manager II System was created.

Originally the product was marketed by The Bottom Shelf (TBS) under the auspicious name of "Info System" and then re-emerged as another TBS product entitled "Data Manager." Finally "Data Manager II" appeared in 1980, distributed by the owners of Exador, Inc., only to be enhanced once more for distribution by Scott Adams Inc. and rechristened "Maxi Micro-Manager." At this point the program steadily developed a favorable reputation, and thanks to the feedback of the public, enhanced versions have appeared at the rate of one every three months, including a final name change to "Maxi Manager."

Throughout all of the history of Maxi Manager, every version has been UPWARDLY COMPATIBLE. Once data has been entered into a computer utilizing any version of this program, the user will never need to re-enter any existing data as he upgrades his software to a newer and more powerful version. Our policy is to make Maxi Manager II an expandable program providing upgrades to current users at a substantially reduced price. We hope you enjoy the program.

I would like to thank the many people that helped in the testing and design of Maxi Manager II:

William E. Braun
Robert H. Burress
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Exador, Inc. will continually strive to improve both the features and performance of Maxi Manager II. In this regard, we appreciate your suggestions and comments. Many of the features included in Maxi Manager II came directed from users of the earlier versions of the software. With your continued help, Maxi Manager II will continue to grow.

Dale Kubler

Maxi Manager II

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A Word to Experienced Maxi Manager Users

If you are familiar with Maxi Manager II's predecessor, "Maxi Manager," you already have a start at mastering Maxi Manager II's capabilities. However, Maxi Manager II contains much that will be completely new to you. Let's briefly discuss the major differences between the two programs.

1. Maxi Manager II (MS-II) may be used with hard-disk drives running with either the DOSPLUS or LDOS operating systems. In addition, CORVUS hard disk units may be used with NEWDOS/80 Versions 1 and 2.
2. MS-II allows for "named" files. Each MS-II data file is assigned a 1-8 character name during initialization. No two data files may carry the same name (MS-II will protect you by preventing this from happening). As a result, more than one data base can be stored on a single disk. This feature is a necessity for hard-disk users. You may switch from one data base to another via a new Master Menu function, "Select New File," by merely requesting the desired file by "name."
3. Files may be configured to hold a user-specified number of records. The previously used line 222 of the Maxi Manager Initialization program has been eliminated and has been replaced with a Utility Menu option that automatically allocates the required parameters for all supported Disk Operating Systems. When operating with DOSPLUS or LDOS, MS-II will dynamically read each disk's granule allocation table (GAT) to determine the maximum amount of free space available for data storage. After calculating the maximum number of records possible, you will be given the option of allocating fewer records for the file. This feature coupled with the ability to name files enables you to store more than one MS-II file on a single disk.
4. MS-II expands the total number of fields per record from 20 to 50. The maximum field length is now 60 characters rather than

the 40-character maximum previously allowed. The record can still span two 10-line, 640 character "pages" for a total data record size of 800 characters (no change).

5. The MMS-II record layout is user-formatted, which means that you can design the record on the video display as you wish it to appear. You may put more than one field on the same line. Text and graphics can be intermixed within the record wherever needed (i.e. comments, allowable input responses, etc.).

6. All "full screen" video displays are now machine language assisted, greatly improving the speed and visual aesthetics of Maxi Manager II.

7. Abbreviated video displays attempt to display up to 9 contiguous fields (previously 3) on a single line, space permitting.

8. A non-destructive cursor has been added to simplify and speed up the Edit function. While data cannot be inserted or deleted in the same manner as with a word processor, character replacement is much easier than it was previously.

(a) Any time the <ENTER> key is depressed, trailing blanks (from right to left) are stripped from the input field.

(b) When the <CLEAR> key is depressed, trailing characters to the right of the cursor are suppressed.

(c) The right and left arrow keys control cursor movement within an input field.

(d) <SHIFT> +  erases the current character.

In addition, the DOS keyboard driver (if present) has been restored for all operating systems with the exception of TRSDOS 2.3, NEWDOS 2.1, and DBLDOS. This means that DOS functions such as repeating keyboards, lowercase drivers, key debounce, and screen print requests, will be honored by Maxi Manager II. As such, the uppercase/lowercase switch for TDOS (the DOS that MMS-II is supplied with) is the combination <SHIFT> + 0.

9. High memory drivers of up to 950 bytes may be used, if desired, provided that they are loaded into memory above FC42H. High memory routines must be loaded before executing the MMS-II LOADER/CMD command. This allows Model I LDOS users to use Double Density as well as double-sided disk drives. Certain operating systems also require hard-disk drivers to be loaded into high memory.

10. All Multiple Filter Search routines are now performed by machine-language code rather than BASIC code. Accordingly, the speed of all searches has been greatly improved. Searches may be limited to records within a user specified range of record numbers. In addition, a true Masked Search function has been implemented for "equal" and "not equal" type searches. The "@" symbol is still used as the masking character. For example, if you want to find a record in which the third and fifth characters of a ten character field are the letter "X" and "Y" respectively, you would enter the search key as follows:

@X@Y@@@@@

11. New "interfield logic" has been added. Rather than answering Logical 'AND' or Logical 'OR' with each Multiple Key definition, "interfield logic" definitions are deferred to the end of the Multiple Key definitions. If only one field is being searched, no "interfield logic" is requested. When more than one field has been requested, you will be prompted to enter the "interfield logic" expression. One level of parenthesis is allowed. "A" equals AND, "O" equals OR, and "X" equals XOR.

For example, to find a record when the results of Key #1 or Key #2 are true, you may type "102" meaning Key #1 OR Key #2, or you may type the single character "O" since a logical OR is desired between all defined keys. The single character "interfield logic" expression also applies to AND and XOR requests. Now let's say that if Key #1 or Key #2 is true, we only want the record if Key #3 is also true. Translated, this becomes Key #1 OR Key #2 AND Key #3. Parentheses play an important role here, the "interfield logic" expression would be "(102)A3".

12. Two new Edit functions have been added. One is entitled Search & Replace and the other is entitled Skip Field Maintenance. With Search & Replace, you may designate fields for automatic replacement within a record when the results of a MultiKey Search are true. User-entered data as well as the contents of an existing field may be specified as the replacement data in this two-pass operation. This allows data from a field possibly named "Ending Balance" to be relocated to a field possibly named "Beginning Balance" while simultaneously zeroing out a field possibly named "Monthly Payment." All calculated fields are recomputed following the replacement operations. This feature is great for updating subscription lists, new profit margin percentages, etc.

13. Skip Field Maintenance introduces a totally new Edit function concept. The best way to explain this is by example. Suppose you are creating a data base with 35 fields of which only 7 can be entered at the present time. Under normal conditions, you would have to depress the <ENTER> key 28 times to skip over the fields that could not be entered. With the introduction of Skip Fields you may select the Edit option before you start adding your records and from the Edit Menu, select Skip Field Maintenance. From the Skip Field Maintenance Menu, you may define as many fields as you like to be skipped during the Add New Records function. This can be quite a time saver. A single keystroke entered from within the Skip Field Maintenance leg of the Edit function is all that's required to remove Skip Fields once they have been defined.

14. The screen print initialization parameters have been removed from the initial Maxi Manager II display screen. They are now accessed via the Utility Menu.

15. Document Files no longer contain field names. With Maxi Manager II, all field label names are replaced with field "numbers." The exceptions to this are the use of (*MSR#*) for the relative disk record number, (*MSD#*) for the actual disk record number, and (*DATE*) for the current date. The DOUFILE Utility has been totally rewritten (actually the rewrite was for Maxi Manager Version B.0). DOUFILE is much easier to use and supports the field "number" concept. The Print File Function

(PFF) default values have also been changed. The new defaults are:

Page Length.....	66
Line Spacing.....	1
Top Margin.....	0
Bottom Margin.....	0
Line Length.....	80
Left Margin.....	0
Right Justification.....	No
Indentation.....	No
Page Numbering.....	No

16. The Maxi Manager Utility Package #1 programs have been upgraded for MMS-II and are supplied as an integral part of Maxi Manager II. Complete versions of Maxi Manager Version B.0 also include these utilities. The programs involved are RECOVER2, EXTRACT2, and MERGE2.

17. With the aid of Prosoft's Faster program, additional speed (in the neighborhood of 20%-30%) has been attained.

18. Relative and Actual Disk Record Numbers are displayed whenever possible in the Edit or Display modes.

19. When in the Speed Search mode, you can toggle back and forth between Speed Search and Edit provided that you do not delete a record. After deleting a record, you will remain in the Edit function.

20. A hard-copy listing of the MMS-II file definitions may now be obtained via the EXTRACT2 Menu.

21. A hard-copy Audit Trail may be selected as an Initialization Parameter option. The Audit Trail may be selected for the "Add" or "Edit" functions. When selected for the "Add" function, MMS-II will print the Relative and Actual Disk Record Number of each record added. When selected for the "Edit" function, MMS-II will print the Actual Disk Record Number of the record that is being edited as well as the previous and current contents of all changed fields. If the record is deleted, the contents of the

entire record will be printed.

22. The Print function has been drastically changed. You may now define searches, selected ranges, totals, subtotals, and perform Key File Maintenance from the Print function menu now entitled the "Printer Control Menu." In addition, a page break (top of form) may be specified when printing subtotals. MMS-II will also always advance to the top of form completing page footer requirements whenever a printing session is complete. It is no longer necessary to "Clear the File Area," "Load the Document File," "Compile the Document File," and then select the print function. This is now automatic. Once a Document File has been specified, it along with any selected print ranges, multiple key search criteria, and subtotals/totals, will be retained within the data base's Master file for use during the next print session.

All Document Files must now be saved in ASCII format. MMS-II will read any ASCII file without the need for special conversion programs as is the case with Maxi Manager. As a result, Document Files created with the Newsprint or Lazy Writer word processors are now directly compatible. In order to enable this compatibility, the HEX zero (00H) end of file (EOF) mark inserted automatically by Scripsit, Electric Pencil, and newer versions of Lazy Writer and previously used by Maxi Manager to determine the end of a Document File has been eliminated. All Document Files must now end with a new line containing the dot command ".END". Spelled out that's a single period followed by the uppercase letters END followed by a carriage return.

In order to make room for the many substantial changes made to the Print function, a few of the less frequently used functions of Maxi Manager had to be either removed or modified. The most significant changes are as follows:

- (a) Document files must be 3072 characters or less in length.
- (b) The total number of Keyboard Variables has been reduced from 20 to 5.
- (c) The interrupt features that allowed you to "restart

printing" have been removed. Interrupt requests via the BREAK key are still honored however. You will now be returned to the Printer Control Menu.

(d) All Manual Form Setting options have been removed as have the view current configuration parameters function.

23. Newsprint owners will be pleased to discover that Maxi Manager II allows them to control the printing process from within the word-processing program.

24. A program entitled CONVERT2 is included and is used to upgrade existing Maxi Manager data bases to Maxi Manager II format. CONVERT2 is executed via the "Extension Program" option of the Utility Menu. CONVERT2's effects are not reversible so be sure to work from backup copies of your existing data bases.

After a file has been converted, you must return to the DOS command level and rename all your data files. The new data files have a file name of your choice with the following extensions:

Old File Name	New File Name
MASTER/MMS.PASSWORD	filename/MAS.PASSWORD
RECORDS/MMS.PASSWORD	filename/REC.PASSWORD
MATH/MMS	filename/EQU.PASSWORD
POINTER1/MMS.PASSWORD	filename/KF1.PASSWORD
POINTER2/MMS.PASSWORD	filename/KF2.PASSWORD
POINTER3/MMS.PASSWORD	filename/KF3.PASSWORD
POINTER4/MMS.PASSWORD	filename/KF4.PASSWORD
POINTER5/MMS.PASSWORD	filename/KF5.PASSWORD

Maxi Manager II file structures require that the MATH/MMS file be assigned a password. The best way to do this is to use the DOS ATTRIB command:

ATTRIB filename/EQU (UPD=PASSWORD,ACC=PASSWORD) <ENTER>

This assumes that you have already renamed the file from MATH/MMS to filename/EQU.

CHAPTER 1

Introduction

BEFORE YOU GET STARTED...

We know that you are eager to jump right in and start using Maxi Manager II. But to get the most out of it, we urge you to read this User's Manual carefully from beginning to end before attempting to use the program. The vast majority of problems encountered can be avoided by becoming familiar with the contents of this manual.

We have designed the User's Manual to help you become familiar with Maxi Manager II as quickly and painlessly as possible. Still, no program with the capabilities of Maxi Manager II can be mastered overnight. As with any other powerful tool, a certain amount of study and practice will be necessary before you can use it for serious work.

The majority of the manual is devoted to a tutorial - instructions which give you examples to follow and experiment with. This is the best way to master any program. Experienced users who desire more specific information on HOW a function works will find the second section (the Technical Manual) extremely helpful.

SOME CONVENTIONS

For clarity, data which you are to type into the computer is presented in reverse type. For example:

Type BACKUP <ENTER>

means to type the word BACKUP, and press the key on your keyboard marked "ENTER." Note that individual keys are shown as <BREAK>, <CLEAR>, <ENTER>, etc., and words to be typed are shown

as PASSWORD, YES, RENAME, etc. <SHIFT> + <BREAK> means to press the SHIFT key and the BREAK key simultaneously.

WHAT IS MAXI MANAGER II?

Maxi Manager II is a Data Base Management System. What's a data base? It's a collection of information. Any information. A data base could be an address book, a membership list, an inventory - any group of facts or instructions that you keep together for reference.

The key to a data base is its organization. A simple data base might be a recipe file consisting of a small box full of cards, each of which would contain one recipe. Each card might have several lines, each holding one or more important ingredients. You could organize your file by putting the recipes in alphabetical order (by what ingredients are needed) or even by how long a particular dish takes to prepare—whatever method helps you to find the information you need in the fastest and most orderly fashion. Once you've organized your data base in a meaningful way, it has earned the right to be called a management system.

Your recipe box and cards will serve you very well when you have only a small amount of data to manage. But as your data base grows, moving around the cards and writing or typing data by hand becomes very time-consuming.

ENTER THE COMPUTER

Your computer allows you to store, access and update information in vast quantities and with great speed. But because the information is stored on magnetic media, it is not possible to physically rearrange this information as easily as with recipe cards. To manage information on your computer you need a sophisticated set of programs called, fittingly enough, a data base management system. Maxi Manager II is such a system.

CHARACTERS, FIELDS, AND RECORDS

Maxi Manager II allows you to manage a theoretical maximum of

32,767 records. A record is equivalent to a recipe "card" in the card file system we discussed earlier. Actually, the number of records a particular data base can handle depends on the amount of information each record contains and the disk space available to store it.

Each record can have up to 50 fields (similar to the recipe card "lines"), each of which you can label for easy reference. Each line can be from 1 to 60 "characters" in length—the amount of which is determined by what type of information is being kept. A maximum of 800 characters per record may be stored.

FIELD TYPES

Before you start working with Maxi Manager II, you should know what type of fields are available. Because you are likely to use this program for a variety of purposes, Maxi Manager II offers a variety of different types of fields—nine to be exact!

Field Type

Alphanumeric Field
Numeric Field
Fixed Decimal Numeric Field
Date Field
Extended Date Field
Auto Date Field
Equation Field (Numeric)
Equation Field (Fixed Decimal Numeric)
Integer Numeric Field

The use you make of each field type depends on the type of information being stored in a particular data base.

ALPHANUMERIC FIELDS

An alphanumeric field can contain letters, numbers and special characters. Examples:

Jack Smith
1600 Pennsylvania Ave.
A53#-17AxyT

NUMERIC FIELDS

A numeric field can contain only numbers and the following special characters:

+ - / . D E

Maxi Manager II will accept only numbers and the above special characters while adding or editing a Numeric field. The D and E characters are used when expressing numbers in scientific notation. (If you don't know what "scientific notation" is, you probably won't need to use it.) A detailed explanation on how to use scientific notation is given in the manuals supplied with your TRS-80.

Examples: 123.4

-12497

404/555-1212 (Telephone number)

123-79-9999 (Social security no.)

6.02E-23 (Single precision no.)

1.23456D+12 (Double precision no.)

FIXED DECIMAL NUMERIC FIELDS

Same as Numeric field, except that when you define it, you specify a number of decimal places that entries are rounded off to. This is handy for dollar and cents entries, percentages, etc. (It must be at least 1 decimal place, and is always rounded to the right of the decimal point.)

Examples:

123	rounded to two decimal places is	123.00
3.1417	rounded to two decimal places is	3.14
56.78	rounded to one decimal place is	56.8

DATE FIELDS

Always 8 characters long (MM/DD/YY), 2 digits for the month, 2 for the day, and 2 for the year - with slashes ("/") in between. The main advantage to having a Date field specified as such is during sorting - Maxi Manager II sorts Date fields logically by year, month and day.

EXTENDED DATE FIELDS

Same as a Date field, except that 4 digits are allowed for the year (MM/DD/YYYY).

AUTO DATE FIELDS

You may define one date field per data base as an auto date field. When adding a new record or editing an existing record the date entered when initially loading the program is automatically entered into this field. This feature has a variety of applications, one of which is that at the end of a day, week, month, etc., you may search for and print out all records in which activity took place over the time period.

EQUATION FIELDS (Numeric)

Sometimes it is useful to have a field defined as a mathematical relationship between other fields. For example, if you have a

field for "number of items on hand" and another for "price per item," you could calculate a "total value" by multiplying the two fields together. Any time either field changes, Maxi Manager II will update the "total value" field automatically using this formula:

number of items on hand x price per item

This saves you the work of manually calculating the results and entering them into each record. The sky is the limit with this feature! You can express a field as any combination of defined fields, providing you can express it in 64 characters or less. You can use any mathematic expression that you can use in Level-II or Model III BASIC except exponentiation (UP-ARROW).

An "Equation Field (Numeric)" result will be expressed as though it were a Numeric field.

EQUATION FIELDS (FIXED DECIMAL NUMERIC)

Same as an "Equation Field (Numeric)", except that the result is expressed as a though it were a Fixed Decimal Numeric field. When setting up a new data base, you specify the number of decimal places to round off to.

INTEGER FIELDS (NUMERIC)

Data entered into an integer field is automatically rounded off to zero decimal places. Thus 123.456 becomes 123, 123.56 becomes 124, 12-34-56 becomes 12, etc.

*** NOTE ***

Due to a bug in both the Model I and Model III BASIC ROM's, you should not type a number followed by % , or use % as the first character in a field.
This applies to all types of fields.

A POWERFUL TOOL

Once you have defined the fields and entered information into them, you can manage your information in many ways: adding, editing, deleting, sorting, searching, displaying, and printing—all without knowing or caring how Maxi Manager II stores it.

Let's suppose you were keeping a mailing list for your business. On any given occasion, you might want to have a printed report of all people on your list who live in Vermont. Or maybe you'd like a set of mailing labels for anyone who hadn't done business with you since January. Or (let's stretch it a bit) perhaps you'd like to know all people who fit both requirements.

With Maxi Manager II, you can do all this and more. You can print reports in any format you choose, merge select information from your data base into letters and forms, print labels - all controlled by Maxi Manager II. Here are just a few examples of what Maxi Manager II can help you with:

- | | |
|-----------------------------|-------------------------------|
| * inventory | * sports statistics |
| * time/project management | * bibliographies |
| * record and tape libraries | * purchase orders |
| * professional records | * client billing |
| * books and magazines | * employee data and payroll |
| * stock market portfolio | * church/synagogue membership |
| * student/faculty records | * real-estate listings |
| * stock photos | * recipes |
| * mailing lists | * Amateur Radio log |
| * tax records | * profit/loss statements |

As you can see, your uses for Maxi Manager II will be limited only by your own creativity!



CHAPTER 2

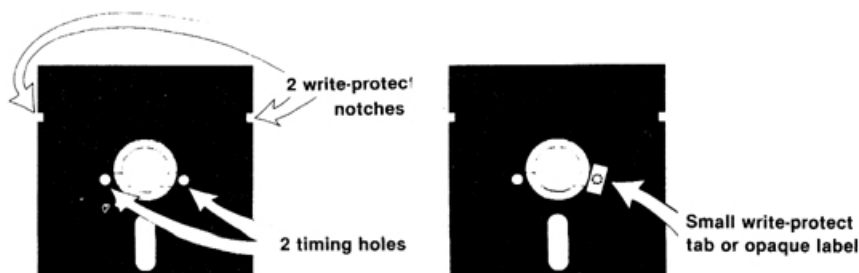
System Requirements and Software Configuration

Maxi Manager II is designed for use with a TRS-80 Model I, III, or IV computer with at least 48K RAM (memory) and one to four disk drives. It is compatible with many hard-disk systems. Maxi Manager II has been tested on a variety of Disk Operating Systems (DOS), and with a variety of disk drives, controllers, and expansion interfaces. Although Maxi Manager II has been tested on a variety of DOS's, because of frequent changes in DOS's and equipment beyond our control, we will not support it on any DOS besides TDOS, DOSPLUS 3.4 or LDOS 5.1.3., or with non-Radio Shack equipment.

Optional (but recommended) is a serial or parallel printer and a word processing program capable of saving text in ASCII format (Scripsit, Newsprint, Electric Pencil, Lazy Writer, etc.).

FLIPPIES

Maxi Manager is supplied on special two-sided disks called "flippies." Flippies will work with any drive—access either side by simply flipping the disk over (see figure 1-1). If your disk drives spin without seeming to find anything, then you may have to install a "band-aid" over one of the two small holes near the large center hole (See figure 2-1).



SOFTWARE CONFIGURATION - MODEL I

(MODEL III & IV users should skip over to page 2-3.)

The Model I version of Maxi Manager II is supplied on three single density, 35-track disks, due to the limitations of single density, and the sheer size of the system. If you have a double-density adaptor, you may wish to transfer Maxi Manager II to your own double density DOS. We recommend the DOSPLUS and LDOS double-density operating systems.

The Model I version of Maxi Manager II is distributed with the DOSPLUS single-density kernel operating system (often referred to as TDOS). TDOS is essentially identical to DOSPLUS 3.4, but contains only the files and utilities needed for the Maxi Manager II system. The complete DOSPLUS system has many extremely useful features and utilities. As you grow familiar with TDOS, you may wish to purchase the entire operating system. It is available from Micro Systems Software, Inc. of Boca Raton, FL.

While we recommend that for simplicity you use the TDOS operating system, we understand that some users have specialized needs that require the use of other DOS's. Consequently the Model I version of Maxi Manager II can be used with the following Disk Operating Systems:

- | | |
|---------------|---------------|
| 1) LDOS 5.1.3 | 4) TRSDOS 2.3 |
| 2) DOSPLUS | 5) DBLDOS |
| 3) NEWDOS/80 | 6) NEWDOS 2.1 |

See Appendices F and G for instructions on converting Maxi Manager II to run with the above DOS's.

The Model I version of Maxi Manager II can be run with the following hardware additions:

- 1) Radio Shack RS-232-C serial interface board
- 2) Small Systems Hardware TRS232 interface

- 3) Lowercase modification (either Radio Shack or "Electric Pencil" versions)
- 4) Percom Doubler or equivalent
- 5) Radio Shack Double Density Adaptor (with LDOS or DOSPLUS)
- 6) Winchester Hard Disk Drives
- 7) Processor "speed-up" kits

SOFTWARE CONFIGURATION - MODEL III & IV

The Model III/IV version of Maxi Manager II is supplied on two double-density 40-track disks, marked "MODEL III/IV." For your convenience, it includes the DOSPLUS kernel operating system (often referred to as TDOS). DOS is essentially identical to DOSPLUS 3.4, but contains only the features needed for the Maxi Manager II System. As you grow more familiar with TDOS, you may wish to purchase the entire operating system. It is available from Micro-Systems Software Inc. of Boca Raton, FL.

While we recommend that for simplicity you use the TDOS operating system, we understand that some users have specialized needs that require the use of other DOS's. The Model III/IV version of Maxi Manager II can be used with the following Disk Operating Systems:

- | | |
|---------------|------------------------|
| 1) LDOS 5.1.3 | 3) NEWDOS/80 Version 2 |
| 2) DOSPLUS | |

See Appendices F and G for instructions on converting Maxi Manager II to run with the above DOSs.

The Model III/IV version of Maxi Manager II is compatible with the following hardware additions:

- 1) RS-232-C serial interface board
- 2) Winchester hard-disk drives
- 3) Processor "Speed-up" kits

CHAPTER 3

Getting Started

In this chapter you will learn how to load Maxi Manager II into your computer, what the Master Menu is and how to use it, and what is in the sample data base.

LOADING MAXI MANAGER II

For the convenience of advanced users, you may load one or more high-memory drivers before you load Maxi Manager II, provided that they load into RAM above FC42H, and use no more than 950 bytes. Most DOS keyboard drivers may be used, with the known exceptions of TRSDOS 2.3, NEWDOS 2.1, and DBLDOS.

MODEL I ONLY

Make a backup copy of each of the Maxi Manager II disks, following the instructions in Appendix A. Then insert the copy of Disk A into Drive 0 and press the reset button at the rear left-hand side of the keyboard. Maxi Manager II will begin loading. This procedure is often referred to as "booting the system."

MODEL III/IV ONLY

Make a backup copy of each of the sides of the disks marked MODEL III/IV, following the instructions in Appendix A. Then insert the copy of Disk A in Drive 0. Press the orange button located at the upper right-hand side of the keyboard area. This procedure is often referred to as "booting the system." Maxi Manager II will take control of your computer and begin loading.

ALL MODELS

After about 15 seconds, you will be asked to enter the date. Type it in MM/DD/YY format. Next you will be asked to enter the name of the data file you wish to access. To create a new file, press BREAK (@ ENTER for LDOS users). For now, type S A M P L E ENTER. You will be asked to enter the file's password. SINCE THE SAMPLE DATA BASE WASN'T ASSIGNED A PASSWORD, YOU MAY SIMPLY PRESS ENTER in response to this question.

For future reference, keep in mind that any password you assign to Maxi Manager II must adhere to the following rules:

- 1) It must be 1 to 7 characters in length.
- 2) The first character must be a letter; the rest may be numbers or letters.

"PASSWORD", "RIA", and "ZAPP8" are all examples of valid passwords. Don't forget the password you enter! If, next time you use Maxi Manager II, you don't remember the password you assigned, you won't be able to use that data file. Type passwords S L O W L Y ! Each time a valid character is typed and accepted, a # symbol will appear on the video display. This is a security measure to keep others from seeing your password.

If you don't really need to use passwords, press ENTER without typing anything else when assigning a password to a new data base. No password will be assigned. (As far as you're concerned, that is. Actually, Maxi Manager II assigns a default password of "MS".)

THE MASTER MENU

After loading the program, your video screen should look like this:

MAXI MANAGER II	
Code	Function
1	- Add New Records
2	- Edit Existing Records
3	- Display/Print Records
4	- Sort Records
5	- Key File Maintenance
6	- Define New File
7	- Utility Programs
8	- Select New File
9	- Close Files and End

ENTER Function Code desired: .

Figure 3-1 - The Master Menu

This screen is referred to as the "Master Menu," because you select from it what you want Maxi Manager II to do, just as you make selections from a menu at a restaurant. To select an option, type its number and press ENTER.

Whenever a particular task is completely finished, you will always be returned to this menu. Let's take a brief look at each of the options on the Master Menu:

Option 1 - Add New Records

Use this option to add complete new records to your Data Base.

Option 2 - Edit Existing Records

Suppose that you discover that the data in a particular field of one of your records is incorrect. You can use Option 2 to recall the record and change information in any field, or even all fields. You can also use Option 2 for mass deletion or editing of a SERIES of records that meet requirements you specify.

Option 3 - Display/Print Records

For many users, the majority of the time not spent adding new records will be spent with this option. It allows you to display

or print out data in a variety of ways. All display and print operations (except screen prints) are chosen from a submenu which appears when you select this option.

Option 4 - Sort Records

With Option 4 you can put your records in a different order (sort them) to organize your information more efficiently, or to make it easier for you to find data.

Option 5 - Key File Maintenance

While you might simply shuffle through the recipe cards in a card file to reorganize them, it is terribly inefficient for a Data Base Management system to physically "move" records around during a sort operation. Instead, Maxi Manager II keeps a table of "pointers," which keeps track of where each record resides on the data disks. When you sort the records, all Maxi Manager II does is rearrange the table. This method is considerably faster and more reliable than moving around the actual records. The table is then stored on disk as a "Key File."

Maxi Manager II allows you to have up to five Key Files at a time. Thus a single data base can be organized in five different ways at any given time for ease in finding and retrieving information.

Option 6 - Define New File

Use this option any time you want to create a new Data Base from scratch.

Option 7 - Utility Programs

With this option you can use one of several utility programs:

- * to create document files for printing reports, form letters or labels
- * to reset the initialization parameters (see page 19-2 and 19-3)
- * to calculate the maximum number of records that

Maxi Manager II will support

- * to recover damaged key files
- * to reconfigure the data base
- * to configure Maxi Manager II for a different Disk Operating System (DOS)
- * to allocate disk storage space for a new Data Base
- * to transfer data to VisiCalc (tm)
- * to print multi-up (cheshire) labels
- * to create Newsprint-readable files

Option (8) - Select New File

This option allows you to work with a different Maxi Manager II data file without exiting to DOS.

Option (9) - Close Files and End

This option closes all open files and ends the program. It should be the only way you end a session using Maxi Manager II. There are only two exceptions:

- * You may exit a printing session by simply pressing the reset button
- * Several of the utility programs included with the system allow you to exit to DOS.

THE SAMPLE DATA BASE

For the next few chapters, we will be using examples and the included sample data base to illustrate features and techniques. Near the end of the book we'll show you how to set up a data base of your own. The sample data base is found on the Model I "C" disk, and the Model III "A" disk.

WHAT'S IN THE SAMPLE DATA BASE?

The sample data base contains information on some batteries and their manufacturers. It is typical of a data base a company purchasing agent might keep, showing prices, markups, inventory information, and contacts. While the information stored in it

may be of little interest to you, it nevertheless serves as a valuable learning aid.

Here is how the sample data base is defined, showing each field, its type, and its input length (i.e., the number of characters it will hold):

No.	: Field : Label	: Field : Type	: Inp. : Len.
1	: Product Name	: Alphanumeric	: 28
2	: Product Code	: Alphanumeric	: 12
3	: Quantity on hand	: Numeric	: 3.0
4	: Quantity ordered	: Numeric	: 4.0
5	: Cost per unit	: F.D.N.	: 10.2
6	: Date of last order	: F.D.N.	: Date
7	: Inventory Value	: Equation (F.D.N.)	: 11.2
	: equation for field 7 = F#3 * F#5		:
8	: Purchase Price	: Equation (F.D.N.)	: 11.2
9	: Percent Markup	: Numeric	: 4.0
10	: Retail Price (Act)	: Numeric (F.D.N.)	: 9.2
11	: Retail Price (Cal)	: Equation (F.D.N.)	: 9.2
	: equation for field 10 = F#5*(1 + F#9/100)		:
12	: Manufacturer	: Alphanumeric	: 30
13	: Representative	: Alphanumeric	: 26
14	: Address	: Alphanumeric	: 25
15	: City	: Alphanumeric	: 18
16	: State	: Alphanumeric	: 2
17	: Zip Code	: Numeric	: 5.0
18	: Comments	: Alphanumeric	: 40

The ".2" following the input lengths of field numbers 5, 6, 7, 9 and 10 indicates that the values are rounded to 2 decimal places. This is useful for fields that involve money, which should only be accurate to 2 places.

"F.D.N." stands for Fixed Decimal Numeric.

CHAPTER 4

Adding New Data

Now that you know what's in the sample data base, the next logical step is to try adding more information to it (known as "adding records" in computer jargon). Load Maxi Manager II and specify the sample data base (SAMPLE). Then select "Add New Records (Function Code #1) from the Master Menu. After a few moments the following will appear on your video display:

Add Function		22 Spare Records
		7 Active Records

1. Product Name:	2. Product Code:
3. Quantity on hand:	4. Quantity ordered:
5. Cost per unit:	6. Date of last order:
7. Inventory Value:	
8. Purchase Price:	9. Percent Markup:
10. Retail Price (Act):	11. Retail Price (Gst):

Is this entry correct (Y/N) ?	ENTER '0' when Finished
ENTER '0' to Cancel & Finish	ENTER '8' to Cancel Entry

In the upper right-hand corner of the screen is the number of ACTIVE records (records already in use) and the number of SPARE records (records that are available but are not currently in use). These numbers change as you add or delete records from the data base. Also shown on the screen are the data base field numbers and labels, along with periods which show how long each field is (maximum numbers of characters you're allowed to enter).

Maxi Manager II will prompt you to enter information into one field at a time by changing the periods to small blocks and flashing a cursor (a large graphics block used to indicate that Maxi Manager II expects you to type something.) If you want to skip over a field, press <ENTER> and it'll be left blank. Otherwise, type what you want to enter for the field and press <ENTER>.

You might remember that in the previous chapter we described our sample Data Base as having 18 fields. But there are only 11 displayed—where are the last 7 fields? When fields are defined on more than one page, Maxi Manager II displays page one first, and page two when you ask for it. When you are done with the first page, the second will be displayed.

SPECIAL FUNCTION KEYS

There are several special keys that Maxi Manager II recognizes whenever your input is expected. They are:

<SHIFT> + <BREAK> (TRSDOS 2.3, NEWDOS 2.1, and DBLDOS only)

Allows you to enter data in both uppercase and lowercase, using the shift key (like a typewriter keyboard).

<SHIFT> + <CLEAR> (TRSDOS 2.3, NEWDOS 2.1, and DBLDOS only)

Switches keyboard back into uppercase-only mode (like a SHIFTLOCK on a typewriter).

<SHIFT> + 0 (NEWDOS/80, TDOS, DOSPLUS, and LDOS)

Switches the keyboard between uppercase/lower case and uppercase only.

If you use both uppercase and lowercase characters when entering data, your printouts will be easier to read and have a less computer-generated appearance. Use this mode whenever possible.



Moves cursor to the right within a field.



Moves cursor to the left within a field.

<ENTER>

Press when finished entering data into a field. Suppresses trailing BLANKS to the RIGHT of the cursor.

<CLEAR>

Alternate means of terminating data entry into a field. Suppresses trailing CHARACTERS to the RIGHT of the cursor.

<SHIFT> + 

erases the current character.

. <ENTER>

Screen Print. Sends contents of video display to printer. For more details refer to Appendix D.

Finally, the <BREAK> and <CLEAR> keys are sometimes used for other special functions. Whenever this the case, a description of their function will appear on the display.

For practice, enter the following record: (what you should enter is on the right.)

(1-Product Name	) RED Alkaline 'AAA'
(2-Product Code	) RRBI
(3-Quantity on hand	) 100
(4-Quantity ordered	) 200
(5-Cost per unit	) 00.10
(6-Date of last order	) 08/10/83
(7-Inventory Value	) calculated (skip it!)
(8-Purchase Price	) calculated (skip it!)
(9-Percent Markup	) 225
(10-Retail Price (Act)	) .85
(11-Retail Price (Cal)	) calculated (skip it!)
(12-Manufacturer	) Red Randolph
(13-Representative	) Red McGillicuddy
(14-Address	) 123 Red Blvd.
(15-City	) Redville
(16-State	) FL
(17-Zip code	) 34567
(18-Comments	) They really ARE red!!!

Notice that you couldn't enter anything for fields 7,8 or 11. This is because Equation fields are filled in automatically by Maxi Manager II. When you finish entering field data, they are "filled in" after Maxi Manager II works out the equations.



When you are finished (and Equation fields have been calculated and filled in) the following prompt will appear at the bottom of the screen:

Is this entry correct (Y/N) ?	ENTER @ When Finished
ENTER * to Cancel & Finish	ENTER & to Cancel Entry

You have 5 options. You can:

- * Add this record to your data base and go on to add another by typing Y <ENTER> (or just <ENTER>)

- * Change one or more fields by typing N
ENTER. Enter the number of the field you want
to change. Type the new information, and press <ENTER>
or <CLEAR> when you are finished.
- * Complete a session of adding records and return
to the Master Menu by typing @ <ENTER>.
- * Cancel this record completely and return to
the Master Menu by typing * <ENTER>.
- * Redo this entire record by typing & <ENTER>.

Before you choose any of these, you might want to review what you put in the first eleven fields. To review the first 11 fields you entered (the first page) press the  (Up-arrow) key. You can go back to the remaining fields (the second page) by pressing the  (Down-arrow) key. Whenever you are reviewing fields in a record (editing, displaying, searching, sorting, etc.) you can use the two arrow keys to move back and forth between the "two pages." Of course, Maxi Manager II will always display the proper page when you are working on or with a particular field.

After you've admired your handiwork, type @ and press <ENTER>, and the information you just typed in will be saved to disk as a record and you will be returned to the Master Menu.

CHAPTER 5

Sorting Things Out

A lot of Maxi Manager II's power comes from being able to access information quickly. To do this, the data you store needs to be organized, or "sorted" in a logical manner that reflects your individual needs. One way to sort it would be to enter the data in exactly the same order you will want to retrieve it in. This is impractical for all but the simplest data bases. Consequently, Maxi Manager II is designed to let you organize or sort your information in a variety of ways, whenever necessary.

Let's return to our friend the recipe file briefly as we explore how sorting and ordering of records works. Suppose our file contained three cards, each with three lines of information:

CARD 1 Dish: PIE Minutes to make: 120 Appliance: OVEN	
CARD 2 Dish: CAKE Minutes to make: 90 Appliance: OVEN	CARD 3 Dish: MACARONI Minutes to make: 45 Appliance: STOVE

Figure 5-1 (recipe cards)

When we make out each card, we give it a card or "record" number, which could be thought of as that card's serial number. This number is for identification only, and does not have anything to do with how the file will be organized. This is an important point.

Let's say we wanted to put our cards in order alphabetically by dish. We could arrange our file by physically moving the cards around until they were in the proper order.

Our cards would then be, in order:

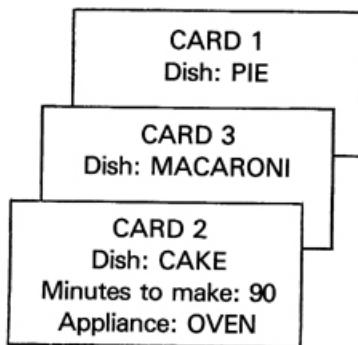


Figure 5-2
(recipe cards)

Shuffling cards by hand is fine when we have only three cards, but what happens if our file grows much larger? One solution is to keep an index of the cards. We could start keeping a separate file card like this:

Index (by Dish:)	
CAKE	2
MACARONI	3
PIE	1

Figure 5-3 (recipe Card)

We would then keep our file in numeric order (1 - 2 - 3). To find a card, we would look it up in the index, find the Card Number, and then look it up in the file. If we wanted to add a 4th card, we would simply call it CARD 4, update the index, and insert the card at the back of the file. Simple!

Now that our cards are ordered by dish, we can easily find a particular recipe by its name. But what happens if we want to find all recipes that take less than an hour to prepare? We would still have to look at every card, since they aren't in any particular order as far as preparation time is concerned. Again, it doesn't take long to look at only three or four cards - but what about sifting through a few thousand?

MORE THAN ONE INDEX

The solution is to keep more than one index, each arranged in order by a different line. If we wanted to be able to find recipes by using information in any line, then we would want to have three indexes:

INDEX 1	
(Dish:)	
CAKE	2
MACARONI	3
PIE	1

INDEX 2	
(Minutes to make:)	
45	3
90	2
120	1

INDEX 3	
(Appliance:)	
OVEN	?
OVEN	?
STOVE	3

Figure 5-4
(recipe Cards)

Which do we put first? Well, if we are going strictly in CARD order, then CARD 1 would come before CARD 2. Although this is a logical solution, it does little to help us identify the cards in question. All we know of these two cards is that they both use the same appliance.

What if we use two lines to sort by? We could use the appliance as the main subject of our sort—and use the dish name to arrange recipes with like appliances. Our index would end up looking like:

INDEX 3	
(Appliance:) (Dish:)	
OVEN (CAKE)	2
(PIE)	1
STOVE	3

Figure 5-5 (recipe card)

KEY FILES

Maxi Manager II uses the same basic principles as our imaginary recipe file indexing system. When you set up a data base, you may choose to keep between one and five different indexes. We



refer to these indexes as KEY FILES. We refer to the card numbers as RECORD NUMBERS.

When you sort a data base, you can have up to three levels of sorting precedence—just as we sorted our recipe cards by appliance, and then by dish for like appliances. An example of how you might use this capability is sorting a mailing list. You could:

- * arrange the file by State.
- * arrange all records that have the same State by City.
- * arrange all records that have the same State and City by Last Name.

Whenever you sort, Maxi Manager II stores the results in the Key File you specify, and automatically changes to it. You may have your data base arranged in as many ways as there are Key Files (five), but YOU USE ONLY ONE KEY FILE AT A TIME. To change to another Key File (and thus the current ordering of your data base) you use another option from the Master Menu: Function Code (5)—Key File Maintenance. We'll discuss that in depth in the next chapter. You may also re-sort and change the order of any or all Key Files at any time you like. This is important, since whenever you add records to your data base they are added to the end of each Key File. Maxi Manager II doesn't automatically update your indexes, so after adding records you should sort the data base again—once for each Key File.

HOW TO SORT

Now that you understand the basic concepts behind sorting, let's try it! After selecting Function Code 4 (Sort Records) from the Master Menu, your screen should look like figure 5-6. You are shown the field labels, which will help you to identify the field or fields you want to sort by. (As mentioned earlier, use the  and  keys to examine both "pages" of the record's fields.)

Sort Function

1. Product Name:	2. Product Code:
3. Quantity on hand:	4. Quantity ordered:
5. Cost per unit:	6. Date of last order:
7. Inventory Value:	8. Purchase Price:
9. Percent Markup:	10. Retail Price (Act):
11. Retail Price (Cal):	

ENTER SORT field # 1 (0 = End): .

figure 5-6

Let's do a practice sort on the sample data base to familiarize you with the procedure. We'll sort:

- * First by "Manufacturer"
- * In case we have more than one field that has the same "Manufacturer," we will also sort by "Inventory Value."

At the bottom of the screen is this prompt:

ENTER SORT field # 1 (0 = End): ..

Since the main sort is on field #12, type: 12 <ENTER>

Next, we see:

ENTER SORT field # 2 (0 = End): ..

The second level of sort is on field #7, so type: 7 <ENTER>

Again, we see the prompt:

ENTER SORT field # 3 (0 = End): ..

We are done entering sort fields, so type 0 <ENTER> (or just ENTER) to go on with the sort process. The following will appear on the right-hand side of the screen:

SORT results to be filed into Key File number (1-?):

where "?" stands for the number of Key Files that are defined

(in this case, 2). For this example, we will use Key File #2, so type: 2 <ENTER>. Another prompt appears at the bottom of the screen:

Beginning record #:.....

You don't have to sort the whole data base if you don't want to. You can select a range of the data base for Maxi Manager II to sort by typing in the first and last record numbers. In effect, this feature allows you to sort by as many fields as you wish (more than the three allowed at a single time) by progressively sorting, selecting a range, and sorting again. You can also perform a Multiple Level sort on a selected range of data. When performing a Selected Range sort, you MUST have the results filed in the currently ACTIVE Key File.

Also, the Multiple Level sorts will handle a maximum of 750 records at the SECOND level when the primary sort fields are identical.

If you want to sort within a range, type in the number of the record you wish to start sorting at and press ENTER. The next prompt is:

Ending record # (0=?????):.....

where "?????" stands for the number of records in your data base (in this case, 8).

Type in the number of the record you wish to end sorting at and press <ENTER>. (One note - if you are sorting only a portion of the data base, the currently defined Key File MUST BE THE SAME as the Key File that receives the results of the sort, or you will be returned to the Master Menu.)

If you are sorting the whole data base, ignore the above and just press <ENTER> to both prompts. The default values are the first and last record numbers, respectively.

After these values have been entered, Maxi Manager II will begin sorting. Maxi Manager II uses machine language support programs

to help speed up the process. Still...it takes time. Perhaps this is a good time to take a break and reflect upon the wonders of microcomputing!

Of course, if you only have a few records, as in our sample data base, it won't be terribly long to sort. Generally though, sorting is a time-consuming procedure, mainly because fields from all records are read into memory and sorted. Then an index is compiled and written to the disk. And if you have more than 750 records, the process will take even longer—there won't be enough memory to hold the whole data base, so it must be sorted in pieces. Sorting by more than one field, having your data base spread out over more than one disk drive, or sorting long fields all add time to the process.

All things considered, you probably don't want to be sorting all the time! You can, as an alternative, find records by multiple filter search techniques (which we'll discuss later) without having a sorted data base. However, if you want your data base ordered in a special way you'll go through the sorting process at least occasionally.

SOME FINAL NOTES ON SORTING

When you add records to your data base, the pointers for the records are added to the end of each Key File. This happens when:

- * 127 new records have been added
- * When an adding session is finished

What this means is that newly entered records will be found near the end of your data base. If you haven't sorted since the last adding session, this should help you find new records without having to sort again.

All sorts are done in a smallest to largest order. You can switch the order from largest to smallest simply by changing an option in the Key File under Master Menu Option (6) - Key File Maintenance. (We'll discuss this in the next chapter.)

After selecting the sort option, you have only one chance to cancel if you decide you don't want to go through with it. Type 0 or just press <ENTER> when asked for the first field number to sort by. After this point is passed, the sort MUST be completed.

When sorting a range of relative record numbers, Maxi Manager II uses the record numbers from the Key File that the sort will be stored in, which is NOT necessarily the current Key File. Thus a given record might be relative record #212 in Key File 1, and relative record #4 in Key File 2. Consequently, you should always make sure that the current Key File and the Key File which will be selected after the sort are the same BEFORE doing the sort.

Finally, remember that after a sort the Key File you specified at the beginning of the sort will become the active one. In other words, your records are automatically put in the new order of your sort.

CHAPTER 6

The Key To Organizing a Data Base

CHANGING KEY FILES

Maxi Manager II can store up to five Key Files, but it only uses one at a time. Option 5 (Key File Maintenance) on the Master Menu allows selection of the Key File to use, as well as performing other important functions.

After selecting Option 5 (Key File Maintenance) your screen should look like figure 6-1. All of the currently defined Key Files are shown, along with the field label assigned to each from previous sorts. The active Key File is indicated by the appearance of the words "ascending" or "descending" printed to the left of the Key File name. If you performed the sort as outlined in the last chapter, Key File 2 now holds the index for the sample Data Base, sorted by Manufacturer and Inventory Value, and should now be displayed as the active Key File.

Key File Maintenance Function	
Key File No.	Key File Description
1	Unassigned Key File
Ascending Order 2	Manufacturer

Beginning Abbreviated Video Display Field = Product Code

Change Key File (Y/N)? .

FIGURE 6-1 Key file screen

After deciding to change Key Files, the first question you must answer is:

Change Key File (Y/N)?

You have two options. You can:

- * Change the currently assigned Key File by typing Y <ENTER>
- * Return to the Master Menu by typing N <ENTER>

You might type N <ENTER> if you just want to view the active Key File order, but in this case we do want to change it, so type Y <ENTER> The next question is:

Key File Number (1-?): .

The "?" above represents the number of Key Files defined. In our sample Data Base, it is "2" because there are two defined Key Files. To change back to Key File 1, type 1 <ENTER>

THE ABBREVIATED VIDEO DISPLAY

Next you are asked to enter the:

Beginning field for Abbreviated Video Display (1-?): ..

"??" above will actually represent the number of fields in your records. There is an option under Display/Print Records called Abbreviated Video Display. Many times when you quickly scan a Data Base, you only need to see a little of each record. The abbreviated video display shows a maximum of 64 characters or nine consecutive fields (whichever fills up one line on the video screen first) for each record, starting with the one you specify here. Normally, you will want to use the field you sorted by—but it can be any field in your record. For our example, we want to have Manufacturer as the first field of an abbreviated display, so just type <ENTER>. The default value for the first field in the abbreviated video display is the same field assigned to the current Key File. To use another field, type its number and press <ENTER>.

The last thing you are asked is:

1 - Ascending Order 2 - Descending Order

Your data base can be organized from least (smallest) to greatest (largest) or vice versa. Order your data base:

- * In ascending order by typing 1 <ENTER>
- * In descending order by typing 2 <ENTER>

If you choose descending order, Maxi Manager II just reads the Key File backwards. For our example we'll want our data base in Ascending order, so type: 1 <ENTER>.

After Maxi Manager II has recorded its new Key File, you are returned to the first question discussed at the beginning of this chapter:

Change Key File (Y/N)? .

Type N <ENTER> to return to the Master Menu.

CHAPTER 7

Information Retrieval

CHOMPING AT THE BIT?

By now, you are probably eager to try your hand at setting up your own data base. Don't do it! We understand your enthusiasm, but we recommend that you stick with us for a few more chapters. In them, we'll introduce you to the most important function of any Data Base Management System—accessing your data once it's in the system. Once you understand the ways in which you may access your Maxi Manager II data, you'll be better equipped when you set up your own data base.

AS YOU LIKE IT!

Because Maxi Manager II is used by people with a wide variety of needs, it provides an equally wide variety of methods for retrieval of information. You can display entire records or just parts of records on the video screen. Display the entire data base or just records which contain specific data. You can also print reports, using just the data and records you need. For form letters that don't look like form letters, (we refer to these as "non-form" letters) you can pull information from your data base, and put it into a letter. You can even transfer Maxi Manager II data to another computer, using an RS-232C interface.

DISPLAYING DATA

Load Maxi Manager II into your computer, specifying the sample data base. From the Master Menu select Function Code 3 (Display/Print records), and the following sub-menu will appear:

Display/Print Options

- 1 - Video Display (Abbreviated)
- 2 - Video Display (Full Screen)
- 3 - Video Display (Speed Search)
- 4 - Video Display (Multiple Filter Search)
- 5 - Print File Function

ENTER Function Code desired: .

PRINT/DISPLAY SCREEN FIGURE 7-1

As you can see, Function Codes 1-4 offer several different ways to display data on the video screen. Function Code 5 is used for printing data or transferring it to another computer. Let's take a brief look at each of the five display/print functions before actually trying any of them.

ABBREVIATED VIDEO DISPLAY

For snooping around, an abbreviated display allows quick scanning of twelve records at a time, rather than sitting through individual full-screen displays of a single record at a time. The contents of up to nine fields, with a maximum of 64 characters in consecutive order are shown for each record.

FULL-SCREEN DISPLAY

A full-screen display lets you examine one record at a time. Field Labels are also displayed.

SPEED SEARCH

If you need to search for a specific piece of data in a single field, and if that field is the one defined by your active Key File, this option is the quickest way to find it. If you need to select records that meet a variety of criteria, use a Multiple Filter Search instead.

MULTIPLE FILTER SEARCH

Use this function to locate records that meet one test, or even a combination of several tests. The results of a Multiple Filter Search can be displayed in either abbreviated or full-screen format.

PRINT FILE FUNCTION

This function is used to print out data on a printer, or send it to another computer.

LET'S TRY IT!

Now that you have a general idea of what the five display/print functions do, the next few chapters will discuss HOW you use them.

CHAPTER 8

Using The Abbreviated and Full Screen Displays

ABBREVIATED DISPLAY (OPTION 1)

The first thing you are asked after selecting this option from the Display Print Options submenu is to:

ENTER Beginning Record Number

.....

This specifies the record you wish to start with. To start viewing the Data Base at the first record, just press <ENTER>. To see a specific record, type in the number of the record you want to see and press <ENTER>.

Maxi Manager II will now display up to 12 abbreviated records. A maximum of 64 characters, or nine fields for each record are shown, starting with the one you specified at Key File Maintenance. (If you are viewing the sample Data Base, there are probably only 8 records shown because that's all there are in the file, unless you've added more.)

The following will appear at the bottom of the video display:

ENTER Desired Record (1-?????)		'B' - Page Back
'ENTER' - Return to Menu	.....	'F' - Page Forward

At this point, you have four options. You can:

- * Type in a valid record number and press <ENTER> to view the entire record in the Full Screen mode
- * Page forward to see the next 12 records by typing F <ENTER>
- * Page backward to the previous 12 records by

typing B <ENTER>

* Return to the Master Menu by pressing <ENTER>.

As always, the data base will be shown in the order you specified in the active Key File.



FULL SCREEN DISPLAY (OPTION 2)

As in the Abbreviated display, the first thing you are asked when you enter this option is to:

ENTER Beginning Record Number

.....

Again, to start viewing at the first record, press <ENTER>. Otherwise, type in the number of the record you want to see and press <ENTER>.

You will be shown the first page of the record you specified. This display is very similiar to the Edit function screen display discussed in Chapter 17 - to see the next page of the record, press the  Key. Press  to return to the first page. At the bottom of the screen is the prompt:

ENTER Desired Record (1-?????) 'N' - Display Next Record
'ENTER' - Return to Menu 'F' - Display Abbreviated File

You have five options. You can:

- * Type in a number and press <ENTER> to see another record.
- * View the next record by typing N <ENTER>.
- * View the previous record by typing P <ENTER>.
(Note that this option is NOT listed on the screen!)
- * Go to an abbreviated display by typing F <ENTER>.
- * Return to the Master Menu by pressing <ENTER>.

CHAPTER 9

Using the Speed Search Function

The Speed Search function (Option 3 in the Display Print Options menu) is used to find a particular record within the data base. To use it, you must be:

- * Searching for an exact match from the left-most character of a specific field.
- * Searching the same field as specified in the current Key File.

In other words, if the search field in the current Key File is defined as "Product Name", you can use Speed Search for a value in the "Product Name" field that matches your search key EXACTLY from the left-most character, much like a LEFT\$ function in BASIC. For example:

JOHN would find JOHN, JOHNNY, and JOHNSON
but would not find UPJOHN

It's important to note that a record found by Maxi Manager II in this mode may not be the FIRST record in the file that matches. If there is more than one record that will match your search key in the data base, you should probably use the Multiple Filter search option instead. Ideally, you should only use the Speed Search to find a unique record in your Data Base, or when you just want to be placed in the general area.

Example:

Supposing your data base is configured as a mailing list. Chances are, if your list is large, there will be many "Jones" in your file. If you were searching for one particular "Jones", you couldn't use the Speed search because you couldn't be sure which "Jones" that Maxi Manager II would find. You would be

dumped among one of the "Jones", and you would have to scan backwards and forwards in the file until you found the right one. On the other hand, if you are searching for "Gelbrewzitsky," and you are fairly certain that there is only one in your data base, it would be appropriate to employ the Speed search.

The first thing you will be asked is to:

ENTER the item sought:

Type in the value you wish to search for. Remember that it must be an EXACT match from the left-most character. Search filters may be entered in upper or lower case; Maxi Manager II converts all data to upper case when performing ANY search operations.

After a match is found, you have six options. You can:

- * Type in a number and press <ENTER> to see another record.
- * View the next record by typing N <ENTER>.
- * View the previous record by typing P <ENTER>.
(Note that this option is NOT listed on the screen!)
- * Go to an abbreviated display by typing F <ENTER>.
- * Return to the Master Menu by just pressing <ENTER>.
- * Branch to the Edit mode by typing E <ENTER>.
(Note that this option is NOT listed on the screen!)

If you choose to edit the record, you will return to the Speed Search mode when you are finished. The only exception to this is if you delete a record, you will remain in the edit mode when finished. Edit Function options are described in Chapter 17.

CHAPTER 10

Multiple Filter Search

The ability to search for and find records that meet a combination of tests is one of Maxi Manager II's most powerful features. This capability isn't just used in the Video Display mode - it is also available for printing, extracting data, the VisiCalc transfer function, the Newsprint transfer function, and editing. It will pay off in the long run if you study Multiple Filter Searching until you understand it fully. Follow the example below using the sample data base, and you shouldn't encounter any difficulties with it.

You can specify up to 10 different tests (often called "filters" because the data base is "filtered" through each test until the only records that are left are those which meet all tests.) Maxi Manager II allows you to search records using the following types of tests:

1. Instring

Using this test, you can search for any section inside a field. For example, if you were searching for "IT" as an "Instring", it would match both "PITTSBURG" and "KANSAS CITY".

2. Not Instring

This test is the exact opposite of the Instring test. In other words, you can search for any field which does NOT contain the section you specify.

3. Equal

As its name implies, this test allows you to search for any field that matches the search filter exactly (from the left-most character, just like the Speed search).

4. Not Equal

This test is the exact opposite of the Equal test. With this test, you are searching for any field which does NOT exactly match the search filter.

5. Greater Than or Equal/Less Than or Equal

This test finds all fields that fall within a selected range.

To add even more versatility, Multiple Filter searches may be performed on the entire data base, or a selected range of records within the data base.

MASKED SEARCH

In addition to all this, in any test (except Instring, Not Instring, and Greater Than or Equal/Less Than or Equal) you can specify any search filter as a Masked search. A Masked search is much like the Instring search, in that we are looking for a match in a section of a field. However, with a Masked search, instead of looking for a section that matches anywhere in a field, you are looking for it at a specific location within the field.

A typical use of Masked search is searching product codes, where the position of characters within the field is important. You might be searching for price, size, vendor, stock number, etc.

A MULTIPLE FILTER SEARCH EXAMPLE

Let's suppose we wanted to find all batteries listed in our sample data base that meet the following 3 tests:

1. Manufactured by Radio Shack
2. Retail price less than or equal to \$.75
3. C or 9V size

Test 1 is an Equal search. We want to find a value in the Manufacturer field that equals Radio Shack.

Test 2 is a Greater/Less Than search. We want to find all values greater than \$.00 and less than or equal to \$.75.

Test 3 is an Equal searches. But we don't have a field for battery types - so how are we going to test for them? Well, field 2 in our sample data base is called Product Code. It is set up so that positions inside the code have explicit meanings:

Position:	1	2	3	4	5	6	7	8	9	10	11	12
CODE:	T	R	S	2	3	1	2	4	C	X	X	X
Means:	Vendor			Order No.					Battery type			

We can test for our battery types by searching position 9 of field 2 for "C" or positions 9 and 10 of field 2 for "9V"

To do this we will do two Equal searches. They will be "Masked" searches because we're only interested in positions 9 and/or 10 - we don't care about the rest of the field.

Each of these tests is called a "Filter." Before the search begins, we will have to define the four filters needed to filter the Data Base.

When you select option 4 from the Display/Print Options sub-menu, your screen should look like this:

Multiple Filter Search
FILTER # 1

1. Product Name:

2. Product Code:

3. Quantity on hand:

4. Quantity ordered:

5. Cost per unit:

6. Date of last order:

7. Inventory Value:

8. Purchase Price:

9. Percent Markup:

10. Retail Price (Act):

11. Retail Price (Cal):

␣ - Cancel All Filters
␣ - Return to Menu

ENTER the field number to be searched: .

FIGURE 10-1 (OPTION 4 FROM PRINT/DISPLAY)

Field labels are shown, and the search filter you are defining is displayed in the upper right corner.

SEARCH FILTER #1

A "Manufacturer" of "Radio Shack"

The first thing you are asked is:

'@' - Cancel All Filters

'*' - Return to Menu

ENTER the field number to be searched: ..

You have three options. You can:

- * Cancel all filters that you've already defined by typing @ <ENTER>.
- * Return to the Master Menu by typing * <ENTER>.
- * Type in the number of a field you wish to search and press <ENTER>.

Since we do want to search, we'll enter a field number here. The first test we want to do is to find a "Manufacturer" of Radio Shack. This involves field #12, so we'll type: 12 <ENTER>

The next thing Maxi Manager II does is ask what type of search is to be performed on this field:

1 - Instring, 2 - Not Instring, 3 - Equal, 4 - Not Equal
ENTER the relational search operator: . 5 - Greater/Less Than

Our first filter is an Equal search, so we will type: 3 <ENTER>

Next, you are asked:

ENTER the search filter:

This is where you actually type in what it is you are searching for - how you do it depends on what type of information it is. For our example, we will type:

Radio Shack <ENTER>

Maxi Manager II now has all the information it needs for this particular search filter. Four options are presented:

'N' - Next Filter

'C' - Cancel this Filter

'B' - Begin Searching

'X' - Cancel Filter & Begin Searching

You can:

- * Define another search filter by typing N
<ENTER>.
- * Begin the actual search process by typing B <ENTER>.
- * Cancel everything you have entered for this
search filter and start over by typing C <ENTER>.
- * Cancel this filter and begin the search
process by typing X <ENTER>.

Since we have more filters to define, we will type:

N <ENTER>

to go on to the next filter.

SEARCH FILTER #2

A "Retail price (Act)" less than or equal to \$.75

The next thing we want to test is field #10, "Retail price (Act)". To the first question:

'@' - Cancel All Filters

'*' - Return to Menu

ENTER the field number to be searched: ..

we will answer:

10 <ENTER>

because the search filter involves field 10. Next:

1 - Instring, 2 - Not Instring, 3 - Equal, 4 - Not Equal
ENTER the relational search operator: . 5 - Greater/Less Than

Answer:

5 <ENTER>

because the search is a "Greater/Less Than" type. Since we are looking for all values less than or equal to \$.75 (in a Fixed Decimal Numeric field of 7 characters with 2 decimal places) we are really looking for all values "Greater Than" 0 and "Less Than or Equal To" .75

The next thing we are asked to enter is the:

Beginning search filter:

What we will tell Maxi Manager II here is that we are looking for values GREATER THAN OR EQUAL TO whatever we enter as the beginning search filter. Type:

0 <ENTER>.

Next, we are asked to enter the:

Ending search filter:

What we enter tells Maxi Manager II that we want all values LESS THAN OR EQUAL TO this ending search filter. Type:

.75 <ENTER>

Next:

'N' - Next Filter

'C' - Cancel this Filter

'B' - Begin Searching

'X' - Cancel Filter & Begin Searching

Type:

N <ENTER>

since we have two more filters to define.

SEARCH FILTER #3 and #4

A "C" battery OR a "9V" battery

Now, we enter the search filter, to the prompt:

ENTER the search filter:

We will answer:

@ @ @ @ @ @ @ @ C @ @ @ <ENTER>

the first time, to test for the "C" battery.

To the next prompt:

'N' - Next Filter

'C' - Cancel this Filter

'B' - begin Searching

'X' - Cancel Filter & Begin Searching

we will answer:

N <ENTER>

because we have another filter to define. Now, we have to go through the same procedure for filter #4, substituting the search filter for the "9V" battery for the one above. Without going into detail on the prompts, this is what you'll type in:

2 <ENTER>

(field 2)

3 <ENTER>

(Equal search)

@ @ @ @ @ @ @ @ 9 V @ @ <ENTER>

(search filter)

Finally, we can begin searching:

'N' - Next Filter

'C' - Cancel this Filter

'B' - Begin Searching

'X' - Cancel Filter & Begin Searching

Type:

B <ENTER>

to start the searching process. The last thing Maxi Manager II asks us to do is:

ENTER the MultiFilter Logical expression ('A'=AND 'O'=OR 'X'=XOR)

LOGICAL RELATIONSHIPS BETWEEN FILTERS

Whenever more than one filter is defined, Maxi Manager II allows you to specify a logical relationship between each filter. The logical operators available for this purpose are AND, OR, and XOR (exclusive OR). When specifying a logical expression, use "A" for AND, "O" for OR, and "X" for XOR. Keep in mind the following rules when using logical operators in Multiple Filter Searches:

- * Use of a single letter code assigns the corresponding logical function across all filters specified.
- * Individual filter numbers are indicated by the use of the filter number.
- * Logical operators may be mixed within a single expression.

Getting confused? We don't blame you! The best way to explain how to use Multiple Filter logic is by example. Going back to our sample data base example, we are looking for a "C" size (Filter #3) or "9V" size (Filter #4) battery that is manufactured by Radio Shack (Filter #1) and costs less than or equal to \$0.75 (Filter #2).

Boiling this down to mathematical terms, we can see that what we want is Filter #3 OR Filter #4 AND Filter #1 AND Filter #2. Boiling it down further, the Multiple Filter logic would appear as:

304A1A2

Or would it? If you think about it, you'll realize that this statement would find records for all "9V" size batteries manufactured by Radio Shack costing \$0.75 or less, but the "C" batteries found may cost more than \$0.75, and may be manufactured by companies other than Radio Shack. In technical

terms, this is because the binding of the logical operators to each filter is of equal significance. To get around this, we use parentheses to assign precedence:

(304)A1A2

The parentheses around filters three and four tell Maxi Manager II that either filter 3 or filter 4 MUST be true, as well as filters 1 and 2. Don't get worried about putting things in exact order, however. This statement could just as well been written as:

1A(304)A2
1A2A(304)
2A(403)A1
(1A2)A(304)

Keep in mind, however, that no more than one level of parenthesis is permitted:

1A(304)A2 - OK
(1A2A(304)) - Not permitted

However, once a set is closed within an expression, more may be opened:

(1A2)A(304) - OK

Also, once a set of parentheses is opened, it must be closed:

1A2A(304 - Not permitted

The final thing we would like to teach you about Multiple Filter logic is that a single logical operator may be used instead of a series of the same operator within a statement—as long as it applies globally across all filters in the statement. Instead of:

1A2A3A4A5A6

you could simply type:

A <ENTER>

DISPLAY FORMAT OPTION

Once you have specified the logical operators to be used in the search, the "Display Format Option" menu will appear:

- 1 - Video Display (Abbreviated)
- 2 - Video Display (Full Screen)

You have the option of viewing the records in an abbreviated display or a full screen display. For this example, let's choose the Full Screen display by typing:

2 <ENTER>

Now you have to specify the record number to start the search at and the record number to end with. If you would like to search the entire data base, press <ENTER> at both of these questions and the system will default to the first and last records in the data base. For our purposes here, press <ENTER> at these questions. If you entered everything correctly, your screen should now look like figure 10-2. In both types of display, you have all of the normal options except that an extra menu item has been added ('C' - Continue Search) which lets you continue on to the next record which meets the search criteria.

```

Relative Record # 4
Actual Disk Record # 6

1.Product Name:8N9K31L Alkaline 'C'
2.Product Code:T8S23129C00X
3.Quantity on hand: 15 4.Quantity ordered: 50
5. Cost per unit: 0.50 6.Date of last order:09/19/80
7.Inventory Value: 7.50
8.Purchase Price: 25.00 9.Percent Markup: 125
10.Retail Price (Act): 0.65 11.Retail Price (Cal): 1.13

ENTER Desired Record (1-7) 'N' - Display Next Record
'ENTER' - Return to Menu 'C' - Continue Search
  
```

FIGURE 10-2

If you entered everything correctly, you should have found only

one record, because only one record met all of the tests we set up. After all records searched for have been found, you are returned to the Master Menu.

BREAKING OUT OF A SEARCH

You can break out of a search by pressing <BREAK> and holding it down until the screen indicates a change in state. The search can be restarted by typing C, as indicated on the video display. This can be done with any Multiple Filter search—not just for video display.

THE KEY TO SUCCESS IS IN YOUR HANDS!

As should be obvious after reading this section, the best (and perhaps only!) way to learn how to use the Multiple Filter search is to experiment on the sample data base, trying a variety of different types of searches and logical combinations.

CHAPTER 11

Introduction and Background to
Printing With Maxi Manager II

Storing and manipulating data within your computer is rewarding, but Maxi Manager II doesn't even begin to fulfill its potential until you learn how to print out data on paper. Maxi Manager II can print mailing labels, fill forms, columnar reports and summary lists. And best of all, it can even merge data into personal "non-form" letters and other documents.

This chapter outlines the theory and basic concepts behind Maxi Manager II's printing functions. Following chapters contain specific instructions and examples.

THE PFF

Maxi Manager II's printing function is performed by a group of programs called the "Print-File Function" (referred to hereafter as the PFF). The PFF controls any printing Maxi Manager II performs. The PFF in turn is controlled by special files which you create. We refer to these files as "Document Files." A Document File is an ASCII text file which tells the PFF where to set margins, how many lines there are on the paper or labels you are using, and where things should be printed. Once the file is created, it is saved on a disk, and can be used over and over again.

Each different type of printed data requires a different Document File, so a typical user might create several of them for a single data base. For example, someone using Maxi Manager II to handle a mailing list might have one Document File to control label printing, another to print reports or directories, and several others to create "non-form" letters.

CREATING THE DOCUMENT FILE

There are three ways to create a Document File. One way is to use DOCUFILE, a utility program supplied with Maxi Manager II for the express purpose of creating Document Files. It's easy to confuse the term "DOCUFILE" with "Document File". Just remember that DOCUFILE is a text editor used to create Document Files.

Another way to produce a Document File is to use a word processor such as Scripsit, Lazy Writer, Newscrip, or Electric Pencil. The final approach is to use the Document File Editor program included with this package.

Why three different methods? Because everybody has a different idea of what constitutes the quickest, easiest way to get the job done. Following chapters include detailed instructions for each approach. We recommend that you try out each different method at least once so that you can make an educated decision as to which approach is best for you.

EXACTLY WHAT'S IN A DOCUMENT FILE?

A Document File must be 3072 characters or less in length, and contains three elements:

- * Plain text
- * Text PFF commands
- * Variables

Plain text is printed out just as it appears on the screen. An example of plain text would be the body of a "non-form" letter.

Text PFF commands closely resemble the formatting commands found in a word-processing program. They tell Maxi Manager II what margins to set, page length to use, line spacing value, whether to justify or not, what output port to use, etc.

You may use two types of variables in a Document File: Field and Keyboard.

FIELD VARIABLES

Field variables are actually the field numbers of fields in your data base, and may be placed anywhere within your text. During printing, when Maxi Manager II finds one in a Document File, it goes to the data base, pulls that field out of the current record, and prints the data from the field in place of the Field variable. The same Field variable may be used several times on the same page. In a letter for example, (*1*), (representing say, "First Name") might be used in the address, the salutation, and the main body. Field variables look like this:

(*12*)

where the number corresponds to a field number in your data base, and the parentheses and asterisks tell Maxi Manager II that this is more than ordinary text. In the sample data base, field number 12 is "Manufacturer," so whenever you use (*12*), information from the Manufacturer field will be printed in its place.

KEYBOARD VARIABLES

Keyboard variables stop the printer at a specific point within the Document File and allow you to add up to 40 characters to the printout directly from the keyboard during a printing session. Up to five may be used in a single Document File. Some possible applications for Keyboard variables are amount a customer owes, amount of last purchase, name of person sending the letter, etc.

For even greater flexibility, Keyboard variables come in two varieties: permanent and temporary. You will be asked to specify which type each Keyboard variable is to be at the beginning of the printing session. You may mix permanent and temporary variables within a single document. Specify permanent, and Maxi Manager II will ask you to enter the Keyboard variable

immediately, and it will remain the same whenever that variable is used in the session. Specify Temporary, and Maxi Manager II will pause before printing each page and ask you to enter new data for the variable.

Keyboard variables look like this:

(*?Enter your name:*)

If this variable appeared in a Document File, it would print:

Enter your name:

on the screen, and wait for you to type up to 40 characters of text, to be inserted starting wherever the Keyboard variable was located within the Document File. Since a Keyboard variable is really just a prompt to appear on the screen, and doesn't interact with the data base in any way, you can say anything you like in it. For example:

(*?ENTER YOUR NAME:*)

(*?DEPARTMENT ORIGINATING*)

(*?How many weeks overdue?*)

(*?Total Amount Due:*)

(*?Enter Date of LAST order:*)

Be creative! Keyboard variables are especially useful if you are setting up Maxi Manager II to be used by someone who is unfamiliar with or frightened of computers. Answering a question and pressing ENTER is much easier for them to handle than editing a Document File!

There are three other types of Variables which you should know about. Wherever (*DATE*) appears, Maxi Manager II will print the date you entered when you loaded the program. (*MMSR#*) and (*MMSD#*) are two somewhat specialized variables which will print the relative and actual record numbers, respectively, for the current record. See Chapter 17 for an explanation of these numbers.

PRINTING

Once the document file is created and saved to disk you can begin printing. The first step is to select the records to be printed. You can include in the printout all the records in your Data Base, a selected range of records, or just those records which pass a Multiple Filter Search.

Next, the document file is loaded and automatically proofed for errors. If none are found, printing can begin. If errors are found, they are displayed on the video screen, and must be corrected before printing can begin.

PULLING IT ALL TOGETHER

In short, there are four basic steps to printing out Maxi Manager II data:

1. Create the Document File which tells Maxi Manager II what, where, and how to print.
2. Specify the records to be included in the printout.
3. Load the Document File into Maxi Manager II.
4. Print.

CHAPTER 12

Printing With Maxi Manager II

Since you just learned that you cannot print anything with Maxi Manager II without first creating a Document File, you are probably wondering if this chapter is in the wrong place. It isn't! Before you try to create a Document File, it's a good idea to know exactly what takes place during printing. Once you understand the printing process, creating Document Files will be easier to understand. So the first time through, we'll use the data from the sample data base, and one of the sample Document Files included with this package. That way, if you encounter problems, there are fewer possibilities to worry about as you try to discover what went wrong. Once you can confidently print using the sample Document Files, you'll be ready to use your own material.

THE PRINTER CONTROL MENU

If you select Option 5 (Print File Function) from the Display/Print Options menu, the following will appear on your video display:

```
Printer Control Menu
-----
Code  Function
-----
0 - Begin Printing
1 - Key File Maintenance
2 - Display Disk Directory
3 - Document File Name <REPORT/DF>
4 - Print Totals <Yes>
5 - Print Subtotals <No>
-> 6 - Print (Selected Range) <1 - 7>
7 - Print (Multiple Filters)
8 - Document File Editor
9 - Return to Menu

ENTER Function Code desired: .
```

PRINT MENU

FIGURE 12-1

This type of menu is often referred to as a "smart" menu, because the computer remembers the options you selected the last

time you used it. Items shown between brackets < > or marked with an arrow (—>) are the defaults that Maxi Manager II will use. Although the arrow currently points to Option 6, it will appear at the top of the menu after creating a new data base.

Let's take a quick look at what each of the options on this menu does:

Option 0 - Begin Printing

Choose this option only after you've made certain that all other options on the menu are set correctly. Assuming your printer is connected and ready to go, printing will begin.

Option 1 - Key File Maintenance

This option is identical to the Key File Maintenance option on the Master Menu. It is included on the Printer Control Menu for your convenience during printing. Refer to Chapter 6 for details on using this function.

Option 2 - Display Disk Directory

It is often helpful to be able to look at disk directories during a printing session—to find a document file, for example! After selecting this option, you will be asked to specify the drive number to display. When you are through looking at the directory, press <ENTER> to return to the Printer Control Menu.

Option 3 - Document File Name <REPORT/DF>

The name between brackets varies, depending on what document file you last used for printing. To select another document file for printing, type 3 <ENTER>. You will be asked to enter the Document File name, and then returned to the Printer Control Menu.

When entering the name of a document file, you must spell the file name correctly, or it won't be found. However, you may enter it in uppercase, lowercase, or any combination of the two. If you enter an incorrect filename, Maxi Manager II will ask you

to try again. If the file has an extension (like /PCL, /SCR, or /DF) be sure to include it. Generally, Document File names should be assigned the File Extension /DF to make them easier to identify.

Option 4 - Print Totals <NO>

When printing columnar reports, you'll often want certain columns totaled and the final results printed as part of the report. If you are printing anything other than columnar reports, or don't want or need totals, then you should set this option to <NO>.

When <YES> is specified, you are asked to:

ENTER the field number to TOTAL (1-??...0=END): ..

("???" represents the total number of fields in your Data Base.) Type the numbers of all fields you want totaled, one at a time, pressing <ENTER> after each one. (Non-numeric fields have a value of one when added together.) When you are done, type 0 <ENTER> to go on. At the end of the report, lines will be drawn under each column with the totals printed beneath.

To cancel all totals and subtotals select this option and type 0 ENTER. This tells Maxi Manager II not to total any fields.

Option 5 - Print Subtotals <NO>

You can also have subtotals of totaled columns printed by specifying a "break point". After specify a field as a break point, whenever that field's value changes, subtotals are printed. This printing of subtotals by secondary fields is useful for breaking out values in a report by vendor, type, etc. The prompt for subtotals is:

ENTER the BREAK POINT field number (1-??...0=End): ..

Type in the number of the field you want used as a "break point" for printing subtotals and press <ENTER>. Or, type 0 <ENTER> here if you don't want subtotals.

OPTION 6 - PRINT SELECTED RANGE <1-7>

The arrow next to this option tells you that a selected range of records will be printed, rather than a series of records which pass tests you specify (as with the Multiple Filters option below). The numbers in the brackets designate the lower and upper record numbers for the PFF to pull data from. If you wish to print a different range of records than that displayed, type 6 <ENTER> and the following will appear on your video display:

Beginning record #:.....
and
Ending record # (0=?????):.....

("?????" represents the last record number currently in your data base.) Type in the first and last record numbers you want the PFF to use while printing. (Just pressing ENTER in answer to each question selects the first and last records respectively.)

OPTION 7 - PRINT (MULTIPLE FILTERS)

Like its video display counterpart, this sub-option allows you to select only those records that meet a single test or combination of up to 10 separate tests. This feature works just like the multiple filter video display. Refer to Chapter 10 for complete instructions on using the Multiple Filter search.

OPTION 8 - Document File Editor

Occasionally you will make an error when creating a Document File. Printing cannot take place until the error has been corrected. This option allows you to make corrections to your file without exiting Maxi Manager II. When you are finished you are returned to the Printer Options Menu. Note that if the Document File Editor is not on the disk currently in Drive 0, you will be asked to load the correct disk. Refer to Chapter 25 for complete instructions on using the Document File Editor.

Option 9 - Return to Master Menu

Select this option to return to the Master Menu.

LET'S TRY PRINTING

By now you should have a pretty clear understanding of the printing process, so it's as good a time as any to give it a try.

Go to the Printer Control Menu. If you changed any options on the menu, change them back to the values in Figure 12-1 on the first page of this chapter. Then select the Begin Printing option by typing 0 <ENTER>. You will be asked to insert your data disks in their correct disk drives. If you are using the SAMPLE data base, press <ENTER>. After inserting the data disks, your printout should look something like this:

11/11/11

```

=====
Product Name : Manufacturer's Name : On Hand : On Order : Order Date : Value
=====
Powermaster A: Bill's Batteries      :    20 :    20 : 08/12/79 : -10.00
Powermaster ' : Bill's Batteries      :   159 :   150 : 11/22/79 :  15.90
Powermaster A: Bill's Batteries      :   200 :   400 : 11/23/79 :  30.00
ENERCELL Alka: Radio Shack           :   300 :    0 : 07/12/80 :  75.00
ENERCELL Alka: Radio Shack           :    45 :    0 : 07/12/80 :  42.75
ENERCELL Alka: Radio Shack           :    50 :    0 : 09/19/80 :  20.00
ENERCELL Alka: Radio Shack           :    50 :    0 : 09/19/80 :  25.00
=====
                               :      :      :      :
                               824    570                198.65
=====

```

FIGURE 12-2 HERE

KEYBOARD VARIABLES

The sample file you just printed contained only Field variables. If there are any keyboard variables in the Document File, you are asked:

USAGE of VARIABLE "variable prompt" (P/T)?

(where "variable prompt" stands for the prompt you defined for that keyboard variable.) You have two more options here. You can define the Keyboard variable as:

- * Permanent by typing P <ENTER>
- * Temporary by typing T <ENTER>

Remember that a permanent keyboard variable stays the same throughout the printing session, and you are only asked to type its data once. A temporary keyboard variable changes from page to page, and you are prompted for input at each page.

PRINTING ON SINGLE SHEETS

If you will be printing on single sheets of paper, you can place a special command in your Document File to make Maxi Manager II pause at the end of each page for you to insert the next piece of paper.

IS IT ALWAYS THIS EASY?

Unfortunately not! A common error is to forget to put the disk containing the Document File you specified in one of the drives (any drive will do). Maxi Manager II will patiently ask you to insert the correct disk until you feed it the right one. If you can't seem to find it, press the <BREAK> key and you'll be returned to the Printer Options Menu.

Another common problem is using Document File commands incorrectly when creating a Document File. Before printing, Maxi Manager II proofreads the Document File. If any errors that would cause disaster are found, it aborts the printing session, but not before displaying a complete list of what was wrong with your Document File. After returning to the Printer Control Menu, you can use the Document File Editor (Option 8) to correct the error. Then try again!

CHAPTER 13

Creating Document Files
With Docufile

After working through the printing session in the previous chapter, you should have a good understanding of every step involved in printing out data save one—creating the Document File. This and the next few chapters will backtrack a few steps and explore in depth that essential first stage of the printing process.

This chapter will teach you the basic facts about using DOCUFILE, and also describe how to make a document file to print labels. Later, we'll learn how to create sophisticated reports and non-form letters.

The first thing you need to know about DOCUFILE is that it is a utility program included with Maxi Manager II that enables you to create Document Files easily, using simple menu-driven commands.

ADVANTAGES AND.....DISADVANTAGES!

DOCUFILE's biggest advantage is that it doesn't require you to remember which text PFF commands to use, and where to use them. Instead, it asks you a series of questions about how you want the printout formatted. Then it automatically puts the commands in the Document File in the correct order. After the commands have been entered, it permits you to enter any text and variables you wish to include in the printout.

Which brings us to DOCUFILE's disadvantage. It is NOT a word processor or even a text editor. For example, if you make an error after entering a line of text, you'll have to go back to the beginning and start over. DOCUFILE is used only for CREATING Document Files. To make changes or correct errors in an existing

file, you must use a word processor or the Document File Editor.

Now if you've been paying very close attention, you're probably thinking, "Well, why not use DOCUFILE to create the Document File, and the Document File Editor to make changes or correct errors?" In fact, many users have found that this method is ideal.

USING DOCUFILE—AN EXAMPLE

For your first experience with DOCUFILE, we'll create a complete Document File for printing labels from the sample Data Base. If you follow the instructions carefully, you should end up with a file identical to the sample file LABEL/DF included with Maxi Manager II. And if all goes well, your finished labels will print out in the following format:

(blank line)
Manufacturer
Representative
Address
City, State, Zip code
(blank line)

If you don't have any labels, or don't want to waste them, don't worry about it! You can use ordinary paper instead. This is a fairly lengthy example, so if you aren't in the mood to really concentrate for the next half hour or so, you might want to leave this until another time. But if you're ready, let's go!

LOADING DOCUFILE

To load DOCUFILE, select Function Code 7 (Utility Programs) from the Master Menu. The Utility Program Function menu will appear on your video screen. From this menu, select Function Code 1 (Extension Program). Select the DOCUFILE option. After Docufile has been loaded, you'll be asked:

Do you wish to read Field Labels from an MMS II Data File (Y/N)?

If you type Y <ENTER> you'll be asked to enter the filename and password assigned to the data base. Since you will be using the sample data base, type SAMPLE for the filename, and press <ENTER> for the password. You will be asked to install the data diskettes in the correct drives. The Field Labels will be read into your computer's memory, but will not be displayed on the screen until later in the program.

The following will be displayed on your video screen:

All Document Files will be assigned the default
file extension of 'DF' unless instructed otherwise.
ENTER the name of your Document File.....

You are being asked to assign a name to the file which is about to be created. It can be up to eight characters long, and can include both alpha and numeric characters, as long as the first character is alpha. Unless you specify otherwise, the extension /DF will be added to the end of the filename. In other words, if you name the file DOCUMENT, it will appear in the disk directory as DOCUMENT/DF. An appropriate name for the label Document File which we are about to create might be LABEL1. Type LABEL1 <ENTER>

Next, you will be asked:

Which disk drive do you wish to store this file on (0-7)? .

Type the number of the drive you wish to hold the Document File disk, and press <ENTER>. Since the supplied disks are full, you may wish to format a disk and use it for just for holding Document Files.

Next, the following will appear on the video display:

Load the disk that will store the
Document File into Drive #d now!

Press ENTER to continue

("d" represents the number of the drive you specified in answer to the previous question.) Insert the disk into the drive and press <ENTER>. If Drive 0 is used to store the Document File, it must contain a copy of the DOS you are using with Maxi Manager II.

ENTERING TEXT PFF COMMANDS

Your answers to the next series of questions will determine what text PFF commands are entered into the Document File. First you are asked questions about the printer you are using:

Direct output to Parallel Port (Y/N)? .

Don't worry if you don't understand what this question means—DOCUFILE is simply trying to determine what kind of printer you are using, and how it is connected to your computer. If you aren't sure, you probably have a parallel printer and should type Y <ENTER> to this question and you'll skip the next two questions. If you type N <ENTER>, you will be asked:

Direct Printed Output to RS-232-C Port (Y/N)? .

If you have a serial printer connected to the computer's RS-232-C port, or plan to send data out the RS-232-C to another computer, type Y <ENTER>. You will then be asked to enter the baud rate and number of null characters to use. If you type N <ENTER>, you'll be asked:

Direct Printed Output to TRS-232 Port (Y/N)?

If you have a serial printer connected to a TRS-232-C port (you probably don't), type Y <ENTER>. You will then be asked to enter the baud rate and number of null characters to use.

After entering the printer port to use, you are asked to specify:

Number of Lines per Page (1-255)

Enter the number of lines that you require. When calculating total number of lines per page, you must include the top and bottom margins as well as the lines of text in the Document File. The rule of thumb is that this number must be greater than or equal to:

total number of lines of text + top and bottom margins + one extra line.

If you are using 8 1/2 X 11 paper, keep in mind that one sheet holds a maximum of 66 lines of text. Consequently, when printing reports or letters, a value of 66 is usually used. For this example we are assuming that the finished product will be printed on standard labels which will hold a maximum of six lines. Type 6 <ENTER>.

If you are paying close attention, you might ask, "But how do I know for sure how many lines long my text will be until AFTER I write the text?" Good question, because it brings out an important fact about DOCUFILE. Unless you plan to use the Document File Editor to edit the file at a later date, you MUST know how many lines of text will be required BEFORE you answer this question. Unless you are printing on single sheets of paper, you can just count the total number of lines available on the paper you are using and enter that value. (See page 13-7 for more information on printing on single sheets.)

Next, you will be asked to specify:

Number of Spaces between Lines (1-5):..

Enter the number of blank lines you wish to use and press <ENTER>. Enter 1 for single spacing, 2 for double spacing, etc. For our example, type 1 <ENTER>. Next, you will be asked to specify:

Top Margin (0-5): ..

Enter the number of spaces you want for a margin at the top of each page, and press <ENTER> For our example, type 0 <ENTER>. Note that this value varies, depending on the total number of

lines available. Since the page was defined as being only six lines long, obviously the top margin couldn't exceed 5 lines! The same holds true for any margins within Maxi Manager II. Next, you will be asked to specify:

Bottom Margin (0-5): ..

Enter the number of spaces you want for a margin at the bottom of each page, and press <ENTER>. For our example, type 0 <ENTER>. You will then be asked to specify:

Number of characters per line (1-255): ...

Enter the maximum number of characters you wish to have on a line, and press <ENTER>. Since you can only fit about 30 characters on a standard label, for our example, type 30 <ENTER>. You will then be asked for the location of the:

Left Margin (0-29): ..

Enter the number of spaces you wish to have between the left edge of the paper and your text and press <ENTER>. While it varies from printer to printer, three spaces should be about right for our example. Type 3 <ENTER>.

PRINTING PAGE NUMBERS

The next series of questions will determine if you wish to have page numbers on your printouts, and what format you wish to use for them. You'll be asked:

Print page numbers (Y/N)?

No numbers are required for labels, so for our example, type N ENTER. You'll simply skip all the questions about page numbers. For future reference, if you type Y, you'll be asked:

Number of first page (1-30000):

Type the number you wish to begin page numbering with, and press ENTER. Next, Maxi Manager II will determine whether you want the

numbers at the top or bottom of each page:

Print Page Numbers at the top of each page (Y/N)?

If you answer Y <ENTER>, page numbers will be printed at the top of each page. If you answer N <ENTER>, page numbers will be printed at the bottom of each page. After you answer this question, the following menu will appear:

Page Number Formats	
Code	Function
1	- Page #
2	- - # -
3	- #

ENTER Function Code desired: .

PAGE NUMBERING MENU FIGURE 13-1

("#" will be replaced by the actual page number during printing.) Type the code number of the format you want and press ENTER. Next you will be asked to specify the:

Left Margin for Page Numbering Labels (0-25): ..

Type the number of the column where you want the Page Numbering Label printing to start and press <ENTER>. This concludes the series of questions dealing with page numbering.

The next question is:

Stop at end of page (Y/N)? .

If you will be using single sheet rather than continuous form paper, type Y <ENTER>. Otherwise, type N <ENTER>. (For our example, type N <ENTER>.) This concludes the series of questions which enter the basic text PFF commands. The following menu will appear on the video screen:

Document File Creation Menu	
Code	Function
0	- Exit
1	- Report Generator
2	- Label Generator
3	- Text

ENTER Function Code desired: .

DOCUFILE CREATION MENU FIGURE 13-2

ENTER Function Code desired: .

You have four options. You can:

- * Exit DOCUFILE and return to the Utility menu by typing 0 <ENTER>
- * Enter the Report Generator mode by typing 1 <ENTER>
- * Enter the Label Generator mode by typing 2 <ENTER>
- * Enter the Text Generator mode (for form letters, etc.) by typing 3 <ENTER>.

For our example, select Function Code 2 (Label Generator). You will be asked:

Do you wish to define Printer Control Codes (Y/N)?

This question allows you to send control codes to your printer. The control codes allow you to print with compressed or expanded type, print boldface type, underline, and more, depending on the capabilities of your printer. For instance, Epson's FX-80 printer will print with condensed type if it is sent control character 15. Sending control character 18 changes the type back to normal. Almost all printers accept control codes to enable special features—unfortunately the codes used by each printer are different. Consult your printer's instruction manual for the correct codes. Type Y <ENTER> if you will be using special codes, and N <ENTER> if you won't. If you typed Y, you will be asked to enter:

Printer Control Code - Decimal Value (0-255):

Type a number and press <ENTER>. In some Instruction manuals, Printer Control Codes are listed in both hex and decimal format, or sometimes only in Hex. Make sure you use decimal codes!

Often, you need to enter more than one code at a time. To permit this, you are asked again:

Do you wish to define Printer Control Codes (Y/N)? .

Enter the second code.

When you are finished defining Printer Control Codes, a chart of the Field Labels will appear on the video display (assuming you read them into memory when offered the option earlier in the program). At the bottom of the display, you'll be asked:

Do you wish to define Column Entries (Y/N)?

You do, so type Y <ENTER>. DOCUFILE will display:

Now defining Row #1, Column #1

Wondering what those rows and columns mean? The rows correspond to lines of text going across a page. Columns correspond to lines of text going up and down a page. Each Field Label is placed in a separate column. The rows and columns are assigned index numbers to help you remember where you are. Next, you are asked:

Do you wish to ENTER an alphanumeric character (Y/N)?

For our example, type N <ENTER>. If you answer Y <ENTER>, you will be asked to:

Type the desired alphanumeric character: .

This character is used to separate the columns of information, and can be a space, any number, symbol, or punctuation mark EXCEPT \$. You can place a character at the beginning of a Field

Label, the end, or both.

Next, you are asked:

Do you wish to continue adding columns to this row (Y/N)?

The purpose of this question is to allow you to create a row with no fields in it (i.e. a blank line). In our example, since you DO want to include a Field Label on the first row, type Y <ENTER>. You are then asked to specify the:

Field Number (0= Keyboard Variable, 19=MMSR#, 20=MMSD#): ..

Type the number of the Field Label you wish to have in the first column of the first row. Type 0 <ENTER> if you wish to enter a Keyboard Variable at this point. (MMSR# and MMSD# represent the relative and actual disk record numbers, respectively, of a particular record in the data base. The actual record number is the number that was assigned when the record was first added to the data base. It always remains the same. The relative record number changes every time the data base is sorted. In some applications, it is useful to include these numbers in a printout.

For our example, we want Manufacturer to be on the first line of the label. so type 12 <ENTER>. DOOUFILE will display:

Now Defining Row #1, Column #2

Do you wish to ENTER an alphanumeric character (Y/N)?

Since there is only one Field Label in this row, a column separator is not really necessary, but a blank space fulfills another important function. If just one of your records is missing an entry in one of its fields, Maxi Manager II might skip a line when printing, throwing the labels out of alignment. You can avoid this problem by putting a blank space at the end of every row. For our example then, type Y <ENTER>. You'll be asked to:

Type the desired alphanumeric character: .

To enter a blank space here, press SPACE BAR <ENTER>. You will then be asked:

Do you wish to continue adding columns to this row (Y/N)?

Since you are done with the first row, type N <ENTER>. DOCUFILE will ask:

Define another row?

Type Y <ENTER> to define another row. Type N <ENTER> and Maxi Manager II will save the file to disk and return you to the Utility Menu. For our example, type Y <ENTER> and you will be asked:

Do you wish to define column entries?

Type Y <ENTER>. The following will appear on the video display:

Now defining Row #2, Column #1

Do you wish to ENTER an alphanumeric character (Y/N)?

Type N <ENTER>. You'll be asked:

Do you wish to continue adding columns to this row (Y/N)?

Type Y <ENTER>. DOCUFILE will display:

Field Number (0=Keyboard Variable, 19=MMSR#, 20=MMSD#): ..

We want the name of the Representative to be on the second line, so type 13 <ENTER>. You'll be asked:

Do you wish to ENTER an alphanumeric character (Y/N)?

Since this is the only Field Label in Row #2, type Y <ENTER>. You'll be asked to:

Type the desired alphanumeric character: .

Press <SPACE BAR> <ENTER> to add a blank space. You'll be asked:

Do you wish to continue adding columns to this row (Y/N)?

Since you are done with this row, type N <ENTER>. You'll be asked:

Define another row (Y/N)? .

Type Y <ENTER> and you'll be asked:

Do you wish to define column entries (Y/N)? .

Type Y <ENTER> and the following will appear on your video display:

Now defining Row #3, Column #1

Do you wish to ENTER an alphanumeric character (Y/N)? .

Type N <ENTER>. You'll be asked:

Do you wish to continue adding columns to this row (Y/N)?

Type Y <ENTER>. and you'll be asked to enter the:

Field Number (0=Keyboard Variable, 19=MMSR#, 20=MMSD#): ..

We want the Address to appear on this line, so type 14 <ENTER>. You'll be asked:

Do you wish to ENTER an alphanumeric character (Y/N)?

Type Y <ENTER> and you'll be asked:

Type the desired alphanumeric character .

Type <SPACE BAR> <ENTER> and you'll be asked:

Do you wish to continue adding columns to this row (Y/N)?

Since this is the only Field Label you'll be putting on Row #3, type N <ENTER>. You'll be asked if you wish to:

Define another row (Y/N)?

Type Y <ENTER> You'll be asked:

Do you wish to define column entries (Y/N)?

Type Y <ENTER> and the following will appear on your video display:

Now defining Row #4, Column #1

Do you wish to ENTER an alphanumeric character (Y/N)? .

Type N <ENTER> and you'll be asked:

Do you wish to continue adding columns to this row (Y/N)?

Type Y <ENTER> and you'll be asked to enter the:

Field Number (0=Keyboard Variable, 19=MMSR#, 20=MSD#): ..

We want the City to be the first thing on this line, so type 15 <ENTER> and the following will appear on the video display:

Now defining Row #4, Column #2

Do you wish to ENTER an alphanumeric character (Y/N)? .

Type Y <ENTER> and you'll be asked to:

Type the desired alphanumeric character: .

We want a comma to appear after the city, so type <,> <ENTER> and you'll be asked:

Do you wish to continue adding columns to this row (Y/N)?

Type Y <ENTER> and the following will appear on your video display:

Now defining Row #4, Column #3

Do you wish to ENTER an alphanumeric character (Y/N)? .

Type Y <ENTER> and you'll be asked to:

Type the desired alphanumeric character:

We want a space after the comma, so type <SPACE BAR> <ENTER> and you'll be asked:

Do you wish to continue adding columns to this row (Y/N)?

Type Y <ENTER> and you'll be asked:

Do you wish to ENTER an alphanumeric character (Y/N)?

Type N <ENTER> and you'll be asked:

Do you wish to continue adding columns to this row (Y/N)?

Type Y <ENTER> and you'll be asked to enter the:

Field Number (0=Keyboard Variable, 19=MSR#, 20=MSD#): ..

We want the State to be the next item on this line, so type 16 <ENTER> and the following will appear on the video display:

Now Defining Row #4, Column #4

Do you wish to ENTER an alphanumeric character (Y/N)?

Type Y <ENTER> and you'll be asked to:

Type the desired alphanumeric character .

We want a space between the state and zip code, so type <SPACE BAR> <ENTER> and you'll be asked:

Do you wish to continue adding columns to this row (Y/N)?

Type Y <ENTER> and you'll be asked:

Do you wish to ENTER an alphanumeric character (Y/N)? .

Type N <ENTER> and you'll be asked:

Do you wish to continue adding columns to this row (Y/N)?

Type Y <ENTER> and you'll be asked to enter the:

Field Number (0=Keyboard Variable, 19=MMSR#, 20=MMSD#): ..

We want Zip Code to be the final item on this line, so type 17
<ENTER> You'll be asked:

Do you wish to ENTER an alphanumeric character (Y/N)? .

Type N <ENTER> and you'll be asked:

Do you wish to continue adding columns to this row (Y/N)?

Type N <ENTER> and you'll be asked if you wish to:

Define another row (Y/N)?

Type N <ENTER> and the file will be saved to disk and you will
be returned to the Utility Program Function Menu.

THE FINISHED PRODUCT

After you are done, load your newly created Document File into a
word processor or the Document File Editor (see Chapter 20) and
examine it. It should look exactly like the sample below:

.PL6
.LS1
.TMO
.BMO
.LL30
.LM3
.PN
(*12*)

(*13*)

(*14*)

(*15*), (*16*) (*17*)

.END

"But wait!" you exclaim. "What are those strange groups of letters with periods in front of them?" Good question. They are the text-formatting commands that were entered into the file when DOCUFILE asked you how you wanted the printout formatted. Appendix E contains complete descriptions of each command and its uses.

The numbers shown above between the parentheses and asterisks (*14*) are field variables. You typed the numbers in yourself, and DOCUFILE was kind enough to supply the asterisks and parentheses.

HOW WELL DID YOU DO?

If there are any differences between the file listed above and the one you created, you made a mistake! Compare the two to determine where the error crept in, and then go back to DOCUFILE and try again, following the example more closely.

Once you are reasonably certain that the Document File is correct, try printing with it. It should print out the information you specified from one record, skip a line, then print out the information from the next record, skip a line, print out the....you get the idea!

CHAPTER 14

Creating Text and Report Document Files With DOCUFILE

FIRST, THE TEXT DOCUMENT FILE

Creating a Text Document File with DOCUFILE is much the same as creating Labels. In fact, the techniques used are exactly the same up to the point where the Document File Creation Menu appears. From this menu, select Option 3 (Text). You'll be asked if you wish to:

Right Justify (Y/N)?

If you type Y ENTER, spaces will be added between words to make each line end at the same place on the the right hand side of the paper. Type N ENTER, and your text will not be justified. After answering this question, the Text Input Menu will appear:

Text Input Menu	
Code	Function
0	- Exit
1	- Enter Text
2	- Review MMS Field Labels
3	- Printer Control Codes

ENTER Function Code desired: .

FIGURE 14-1 TEXT INPUT MENU

You have four options:

- * Select Option 0 to exit DOCUFILE and return to the Utility Program sub-menu.
- * Select Option 1 to enter text.
- * Select Option 2 to display the MMS II Fields on the video screen.

* Select Option 3 to enter printer control codes.

Unless you have a very good memory, it's a good idea to select Option 2 (Review MMS II Field Labels) before attempting to enter text. Assuming you are using the sample Data Base, the following display will appear on your video screen:

Text Input Menu			
FIELD	LABEL	FIELD	LABEL
1 -	Product Name	11 -	Retail Price (Cal)
2 -	Product Code	12 -	Manufacturer
3 -	Quantity on hand	13 -	Representative
4 -	Quantity ordered	14 -	Address
5 -	Cost per unit	15 -	City
6 -	Date of last order	16 -	State
7 -	Inventory Value	17 -	Zip Code
8 -	Purchase Price	18 -	Comments
9 -	Percent Markup		
10 -	Retail Price (Act)		

Depress 'ENTER' to continue

FIGURE 14-2 FIELD LISTING

If you type . (period) <ENTER>, this display will be sent to your printer. It's always a good idea to do this BEFORE attempting to enter text, so you can refer to it when entering Field numbers. When you are finished, press <ENTER> and you will be returned to the Text Input Menu. If you wish to enter printer control codes, select Option 3 (Printer Control Codes), and follow the procedures described in our discussion of Label Generation in the previous chapter.

When you are ready to begin entering text, select Option 1 (Enter Text), and the following will appear on your video screen:

'CLEAR' - End of Text Entry 'BREAK' - End of Text Line
'DOWN ARROW' - Form Feed

.....

The three keys shown here are used to execute three special commands:

* Pressing <ENTER> then <CLEAR> tells DOOFILE that you are finished entering text and you will be returned to the Text Input Menu.

- * Pressing <ENTER> then <BREAK> ends a text line and inserts a carriage return.
- * Pressing <ENTER> then (Down arrow) inserts a form feed. When the PPF encounters it, it forces the computer to stop printing on the current page. After spacing to the top of the next page, printing resumes.

Note that these three special commands
are each preceded by the ENTER key.
This is extremely important!

To enter text, just start typing on the line with the blinking cursor. If you press <ENTER> when you reach the end of the line, another series of blanks will appear, but the text you type WILL BE ADDED TO THE FIRST LINE. In other words, both lines you enter are part of the same "logical" line. To start a new logical line, type <ENTER> then <BREAK>. To leave a blank line, type <ENTER> then <BREAK>, <ENTER> then <BREAK>.

If you make a mistake (before pressing <ENTER> or <BREAK>) backspace using the key and correct the error. Check your text carefully, because once you press <ENTER> you cannot make corrections to the previous line without exiting DOCTYPE.

FIELD AND KEYBOARD VARIABLES

In addition to text, you will want to include Field and Keyboard variables. Remember that Field variables should be entered as:

(*12*)

where the number corresponds to a field number in your data base. Up to five different keyboard variables may be used anywhere in the text, and should be typed like this:

(*?Enter Your Name:*)

If the text you are generating is to be printed out on single-sheet rather than continuous-form paper, you must put a form-feed at the very end of the file. This is accomplished by pressing <ENTER> (down arrow). To save the file to disk,

press <ENTER> then <CLEAR>. You may also use <ENTER> then <CLEAR> at any time to return to the Text Input Menu and input Printer Control Codes (Option 3). After entering the codes, you can continue entering text by selecting Option 1 (Enter Text) from the Text Input Menu.

Before attempting to print using the Document File, you should look at it with the Document File Editor or a word processor to make sure that everything is in the right place.

A SAMPLE FORM LETTER

To familiarize yourself with the Text portion of DOCTYPE, try entering the sample Document File as described below. For the sake of brevity, we'll assume that you have already completed the step-by-step label example, and are now reasonably familiar with DOCTYPE.

After loading DOCTYPE, enter the name you wish to assign to your Document File. Letter1 might be appropriate. When answering the questions about the file's format, use these values:

```

Lines per page.....66
Number of spaces between lines.....1
Top Margin.....4
Bottom Margin.....4
Number of characters per line.....72
Left Margin .....8
Print Page Numbers?.....N
Stop at end of page.....Y

```

When the Document File Creation Menu appears, select Option 3 (Text). You'll be asked if you wish to:

Right Justify (Y/N)?

For our example, type N <ENTER>, and the Text Input Menu will appear. Select Option 1 (Text Input). The Text Entry form will appear. Type the following, exactly as it appears below:

(*?Enter Today's Date:*) <ENTER> <BREAK>

<ENTER> <BREAK>

(*13*) <ENTER> <BREAK>

(*14*) <ENTER> <BREAK>

(*15*), (*16*) (*17*) <ENTER> <BREAK>

<ENTER> <BREAK>

Dear (*13*), <ENTER> <BREAK>

<ENTER> <BREAK>

I have always appreciated the prompt service <ENTER> <BREAK>
and useful information you have provided me about <ENTER>
<BREAK>

(*12*) products. <ENTER> <BREAK>

<ENTER> <BREAK>

I realize that (*15*) is a long way from <ENTER> <BREAK>
us, but if you should ever be in my area, please <ENTER> <BREAK>
feel free to drop by and pay a visit. I'm sure you <ENTER>
<BREAK>

would like our display of your products! <ENTER> <BREAK>

<ENTER> <BREAK>

Sincerely, <ENTER> <BREAK>

<ENTER> <BREAK>

<ENTER> <BREAK>

<ENTER> <BREAK>

<ENTER> <BREAK>

John Q. Public <ENTER> <BREAK>

<.> <Y> <ENTER> <CLEAR>

The Text Input Menu will appear. Select Option 0 (Exit), and your newly created Document File will be saved to disk. You may want to load the file into the Document File Editor or a word processor and make sure that everything was entered correctly and matches the example printed above. If it does, you are ready to print!

CREATING A REPORT

Report generation is a bit more complex than text and label generation, but it isn't really more difficult to understand. There are two fundamental differences between text or label Document Files, and report Document Files.

1. In a report you may print data from more than one record on a single page. In a label or text document file, you may print data from only one record per page.

2. When you print a Field variable in text or on a label, the amount of space required depends entirely on the number of characters entered into the data base field in the first place. Whether the data is three characters or thirty characters long, it will all be printed.

This is not true of Report Document Files. In Report Document Files, a specific number of columns on the page are preassigned to each variable. The amount of columnar space available for each variable is determined when you create the Document File. Thus, if you have allocated 14 characters to a column, it doesn't matter whether the data from a field is two or 22 characters long—14 characters will always be reserved. This allows you to create neatly aligned columnar reports. Of course, if you allocate fewer characters to a column than the data to be printed in it requires, the data that doesn't fit will be hacked off ON THE RIGHT. This is helpful, since the right side will almost always contain the LEAST significant digits of a number within a field.

For our example, we'll create a Document File that will print out data in the following format:

11/11/11

Product Name	Manufacturer's Name	On Hand	On Order	Order Date	Value
Powernaster A:	Bill's Batteries	20	20	08/12/79	10.00
Powernaster A:	Bill's Batteries	200	400	11/23/79	30.00
Powernaster 's:	Bill's Batteries	159	150	11/22/79	15.90
ENERCELL Alkal:	Radio Shack	15	50	09/19/80	7.50
ENERCELL Alkal:	Radio Shack	20	50	09/19/80	8.00
ENERCELL Alkal:	Radio Shack	34	45	07/12/80	32.30
ENERCELL Alkal:	Radio Shack	123	300	07/12/80	30.75
		571	1015		134.45

FIGURE 14-3 print format

To avoid unnecessary repetition, we'll assume that you carefully followed the label and text examples and are familiar with the

techniques previously described.

GETTING STARTED

After loading DOCUFILE and naming your Document File (REPORT1/DF might be appropriate) you'll be asked if you wish to:

Direct Printed Output to Parallel Port (Y/N)?

Type Y <ENTER>.

Number of Lines per Page (1-255): ...

Type 66 <ENTER>

Number of Spaces between Lines (1-65): ..

Type 1 <ENTER>

Top Margin (0-65): ..

Type 4 <ENTER>

Bottom Margin (0-65): ..

Type 4 <ENTER>

Number of characters per line (1-255): ...

Type 80 <ENTER>

Left Margin (0-79): ..

Type 0 <ENTER>

Print Page Numbers (Y/N)? .

Type N <ENTER>

Stop at End of Page (Y/N)? .

===== : ===== : ===== : ===== : =====
===== : ===== <ENTER>

You will be told to press:

'CLEAR' - End Title Definition

'ENTER' - Define Title Line #2

Press <ENTER> and type:

SPACE Product Name : Manufacturer's Name : On Hand : On Order :
Order Date : Value <ENTER>

You will be asked to:

'CLEAR' - End Title Definition

'ENTER' - Define Title Line #3

Press <CLEAR> and you will be asked:

Do you wish to define printer control codes (Y/N?) .

For our example, type N <ENTER>. However, if you previously set your printer to a special typeface for the title, this is the point where you should turn it off again. If you wish to print your data using a special typeface, this is the correct point to enter it.

If you read the Field variables from disk earlier when loading DOCTYPE, a complete list of Field variables will appear on the video display, and you will be asked:

Do you wish to define Column Entries (Y/N)?

Type Y <ENTER> and you'll be told:

Now Defining Row #1, Column #1

Do you wish to continue adding columns to this row (Y/N)?

Type Y <ENTER>

Left or Right Justify (L/R)? .

This question determines whether data will be lined up at the left margin of the column or the right. For our example, type L <ENTER>.

Column Width (3-80): ..

This allows you to set the maximum number of characters available to this column. For our example, type 15 <ENTER>.

Left Indentation within column (0-13): ..

This sets the number of blank spaces to be placed between the left column separator, and the left-most character of your data. For our example, type 1 <ENTER>.

Right indentation within column (0-12): ..

This sets the number of blank spaces to be placed between the right column separator, and the right-most character of your data. For our example, type 0 <ENTER>.

ENTER the desired column separator character: .

Type : <ENTER>

Field Number (0=Keyboard Variable, 19=MMSR#, 20=MMSD#): .

Type 1 <ENTER>

This completes the Column entry for Row #1, Column #1. You will be asked:

Now defining Row #1, Column #2 .

Do you wish to continue adding columns to this row (Y/N)? .

Type Y <ENTER>

Left or Right Justify (L/R)? .

Type L <ENTER>

Column Width (3-65): ..

Type 22 <ENTER>

Left Indentation within column (0-20): ..

Type 1 <ENTER>

Right indentation within column (0-19): ..

Type 0 <ENTER>

ENTER the desired column separator character: .

Type : <ENTER>

Field Number (0=Keyboard Variable, 19=MMSR#, 20=MMSD#): .

Type 2 <ENTER>

This completes the Column entry for Row #1, Column #2. You will be asked:

Now defining Row #1, Column #3 .

Do you wish to continue adding columns to this row (Y/N)? .

Type Y <ENTER>

Left or Right Justify (L/R)? .

Type R <ENTER>

Column Width (3-43): ..

Type 10 <ENTER>

Left Indentation within column (0-8): ..

Type 0 <ENTER>

Right indentation within column (0-8): ..

Type 1 <ENTER>

ENTER the desired column separator character: .

Type : <ENTER>

Field Number (0=Keyboard Variable, 19=MMSR#, 20=MMSD#): .

Type 3 <ENTER>

This completes the Column entry for Row #1, Column #3. You will be asked:

Now defining Row #1, Column #4 .

Do you wish to continue adding columns to this row (Y/N)? .

Type Y <ENTER>

Left or Right Justify (L/R)? .

Type R <ENTER>

Column Width (3-33): ..

Type 11 <ENTER>

Left Indentation within column (0-9): ..

Type 0 <ENTER>

Right indentation within column (0-9): ..

Type 1 <ENTER>

<ENTER the desired column separator character: .

Type : <ENTER>

Field Number (0=Keyboard Variable, 19=MSR#, 20=MSD#): .

Type 5 <ENTER>

This completes the Column entry for Row #1, Column #4. You will be asked:

Now defining Row #1, Column #5 .

Do you wish to continue adding columns to this row (Y/N)? .

Type Y <ENTER>

Left or Right Justify (L/R)? .

Type L <ENTER>

Column Width (3-22): ..

Type 13 <ENTER>

Left Indentation within column (0-11): ..

Type 2 <ENTER>

Right indentation within column (0-9): ..

Type 2 <ENTER>

ENTER the desired column separator character: .

Type : <ENTER>

Field Number (0=Keyboard Variable, 19=MSR#, 20=MSD#): .

Type 4 <ENTER>

This completes the Column entry for Row #1, Column #5. You will be asked:

Now defining Row #1, Column #6 .

Do you wish to continue adding columns to this row (Y/N)? .

Type Y <ENTER>

Left or Right Justify (L/R)? .

Type R <ENTER>

Column Width (3-9): ..

Type 9 <ENTER>

Left Indentation within column (0-7): ..

Type 0 <ENTER>

Right indentation within column (0-7): ..

Type 1 <ENTER>

ENTER the desired column separator character: .

This is the last column, so just press <ENTER>

Field Number (0=Keyboard Variable, 19=MMSR#, 20=MMSD#): .

Type 11 <ENTER>

This completes the Column entry for Row #1, Column #6. You will be asked:

Now defining Row #1, Column #7 .

Do you wish to continue adding columns to this row (Y/N)? .

Type N <ENTER>

Define another row (Y/N)? .

Type N <ENTER> for our example. The file will be saved to disk and you will be returned to the Utility Program Function Menu. Use a word processor or the Document File Editor to edit any errors you made in your newly created Document File. Then try

printing with it and the sample Data Base.

CHAPTER 15

Creating Document Files
With a Word Processor

By now you should have some experience at creating Document Files with DOCTYPE. With that under your belt, it is an excellent idea to explore the uses of a word processor for the same task. A word processor is ideal because it allows you to look at several lines of text at a time, and perhaps more importantly, allows editing of the text as you go along. Even if you don't have a word processor, you should read this chapter, since it presents information that is of great value to users of DOCTYPE and the Document File Editor.

CHOOSING A WORD PROCESSOR

Which word processor should you use? Ideally, one that you already own and are familiar with! The word processor should also function properly on the DOS Maxi Manager II is on. Another requirement is that it be capable of saving the text it creates to disk in ASCII format. Just about all of the more popular programs can do this, but check the word processor's manual or contact the manufacturer if you aren't sure. Scripsit, Newscript, Lazywriter (1.9 or later), and Electric Pencil will all get the job done. Newscript users should refer to Appendix H for information of special interest to them. Also, a patch to make Scripsit work properly with TDOS is included with this package—consult Appendix C for further details.

FORMATTING YOUR PRINTOUT

The basic principles of Document File creation which you have already learned are equally valid here. The biggest difference is that instead of answering a list of questions about what format the printout should take, you'll be putting in the PFF commands yourself. The commands are similar, but not identical

to the commands you already use in your word processor. This can be a little intimidating at first, but you'll soon get the hang of it!

The first and most important rule to remember is that Maxi Manager II accepts one and only one PFF command per line. The command must start with a period, immediately followed by the command parameters. Spaces are not allowed between the period and the command. Example:

.LM6

This command sets the left margin at 6 spaces from the edge of the paper. More on the PFF commands later!

SAVING YOUR TEXT

Once you've created your Document File, it must be saved to disk in ASCII format. With Scripsit, this is accomplished by typing S,A FILENAME when saving it (FILENAME represents the name you assign to the file). Other word-processing systems may or may not require you to do anything special. Generally, there is not enough room on your Maxi Manager II Program diskettes for Document Files, so you should plan to use a separate diskette just for Document Files. As you create your Document File, bear in mind that it cannot exceed 3072 characters in length.

A SAMPLE FORM LETTER

The following text is a sample form letter which you might create using a word processor:

.LM6

.TM4

.BM4

.PL32

.SP

.CM Letter to suppliers

(*DATE*)

(*13*)

(*14*)

(*15*) (*16*) (*17*)

Dear (*13*),

I have always appreciated the prompt service and useful information you have provided me about (*12*) products.

I realize that (*15*) is a long way from us, but if you should ever be in my area, please feel free to drop by and pay a visit. I'm sure you would like our display of your products!

Sincerely,

John Q. Public

.FF

.END

In the example above, .LM6 tells Maxi Manager II to set the left margin of the document 6 spaces from the edge of the paper. .TM4 sets the top margin four lines down from the top. .BM4 sets the bottom margin four lines up from the bottom of the page. .PL66

sets the length of the page to 66 lines. Hopefully, you remember from the previous chapter that page length must be at greater than or equal to the lines of text, plus the top and bottom margins, plus one extra line. .SP tells Maxi Manager II that you are using single sheet-fed paper. The printer will stop at the end of each page, and permit you to insert another piece of paper. .CM designates a comment line. Any text on the same line as this command will not be printed. .FF tells Maxi Manager II to stop printing on that page, and advance to the top of the next page. Finally, .END marks the end of the Document File. You must ALWAYS put .END at the end of your file, since it is the only way Maxi Manager II can tell that it is at the end of the file.

After performing the text merge, your letter might look like this:

October 21, 1983

John Doe
123 Main Street
Bigtown, MN 55343

Dear John,

I have always appreciated the prompt service and useful information you have provided me about Radio Shack products.

I realize that Bigtown is a long way from us, but if you should ever be in my area, please feel free to drop by and pay a visit. I'm sure you would like our display of your products!

Sincerely,

John Q. Public

The above example used only a few of the PFF commands available. Some of the commands weren't used in the example because they simply aren't needed in a form letter. Others have a default value which corresponds to our needs. For example, the text in the letter above would not be right justified when printed, even though we didn't enter the .RN (right justify off) command. Why not? Because Maxi Manager II automatically defaults to that command even if it isn't present in your text. Refer to Appendix E for a complete listing of PFF commands and their default values.

HELPFUL HINTS FOR CREATING FORM LETTERS AND OTHER TEXT

When printing, there are several rules to follow carefully. First, the page length (.PL) must equal the number of lines to be printed on the page + top margin + bottom margin, + ONE EXTRA LINE. That extra line is crucial! If you check the example above, you'll notice that the page length is set to the length of a standard 8 1/2 X 11 sheet of paper.

Second, be very careful HOW you count the lines per page. You must count lines of printed text, not lines on your video display. One way to make sure that your count is correct is to put a carriage return (by pressing ENTER) at the end of each line after all the text has been entered. Then just count carriage returns (shown as small blocks in Scripsit). However, if you use this method, you will not be able to use Maxi Manager II's right-justification feature.

If you are trying to print text on single sheets of paper and the printer puts in extra linefeeds or doesn't stop at the bottom of the page, assuming you included the .SP command, you have probably set an incorrect page length. Count your lines again, making sure you remember to add in the top and bottom margins, plus one line more than there is in the file.

Finally, consider the special characteristics of Field Variables. Suppose you had the following line in a form letter:

(*1*), (*2*) (*3*)

where (*1*) represents City, (*2*) represents (State), and (*3*) represents Zip Code. Depending on what's in your data base, the printout of this line could vary in length considerably:

Frozen Wolf's Breath, Alaska 90012

Id, GA 33006

Two Rivers, Minn. 55343

In other words, the amount of space that will be used in printing a text file depends on how much data there is in any given field—not how many characters there are in a field label, or allocated to a field.

CHAPTER 16

Creating a Report Document File
With Word Processors

This chapter assumes that you are somewhat familiar with the earlier chapter on creating Report Document Files with DOOFILE. If you haven't yet read that chapter, do so now before proceeding.

The most important command in report generation is the Column Specification command. Its format is:

`$<R/L>,<width>,<left>,<right>,<separator>,<variable>`

\$

must be the first character of the line.

`<R/L>`

Specifies RIGHT or LEFT justification of the variable within the column. If the variable is too long to fit in the column, it will be chopped off ON THE RIGHT SIDE.

`<width>`

A number greater than or equal to three, specifying the number of characters to be included within a column.

`<left>`

A number defining the number of spaces between the left margin and the first character of a column.

`<right>`

A number defining the number of spaces between the right margin and the last character of a column.

`<separator>`

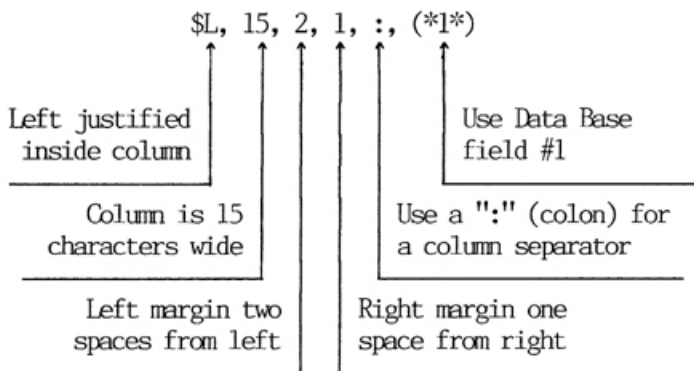
The character (if any) to be used to separate the columns. This character is always positioned in the right-most character

position of the column.

<variable>

Any valid Field or Keyboard Variable. Only one variable can be used in a single Column Specification command.

Here is a sample Column Specification command, and how it is interpreted by the PFF:



Unlike the other types of printouts we've discussed, Report Generation allocates a fixed amount of space for each variable. In the example above, the actual space used to print the contents of Field Variable #1 is the column width 15, minus the left and right indentations, and minus 1 which is due to the fact that the column separator is not empty. If we do the computations, the result is $(15 - 2 - 1 - 1) = 11$.

As many columns as are needed can be placed on a line to produce the report, but be sure that the sum of all column width values does not exceed the line length of your printer or the line length specified with the Document File page format definition command.

After we have defined all the column specifications needed, we must tell the computer that all the column specifications defined thus far are part of the same row. This is done with the Row Description command.

For example, the following tells the computer that we have defined a row of three columns:

```
.RD                      Defines start of new row

$L,15,2,1,.,(*1*)      1st column
$L,20,1,1,.,(*2*)      2nd column
$R,15,4,4,.,(*3*)      3rd column. Note how an
                        empty column separator
                        is specified (.,).
```

If more information is to be printed than can fit on a single line, we can create a second row by using the row description command defined above. If a third or a fourth line is needed, then it too, can be created.

Suppose we want to create a report containing first names, last names, and telephone numbers on the first row, and addresses, cities, and states on the second row. Suppose further that field 1 is First Name, field 2 is Last Name, field 3 is Telephone Number, field 4 is Address, field 5 is City, and field 6 is State. We can use the following format to organize the information on two rows:

```
.RD                      Begin 1st row
$L,15,2,1,.,(*1*)      1st row 1st column
$L,20,1,1,.,(*2*)      1st row 2nd column
$R,15,4,4,.,(*3*)      1st row 3rd column
.RD                      Begin 2nd row
$L,15,2,1,.,(*4*)      2nd row 1st column
$L,20,1,1,.,(*5*)      2nd row 2nd column
$L,15,8,8,.,(*6*)      2nd row 3rd column
```

In the report in the previous example, every two lines will contain information pertaining to one person only. This is due to the fact that we are using two rows to print the information about one person. We can say then that every two rows correspond to one entry in the table we are generating. In a general way, we can say that a Report Entry (.RE) is composed of all the rows pertaining to one record. Following this definition, the format of the Report Entry of the above example is two rows with three

columns per row.

Two commands, .RE and .END, are used to define the beginning and ending boundaries of a Report Entry. The following is a complete description of the Report Entry of our sample report:

.RE	Start of Report Entry
.RD	Begin 1st row
\$L,15,2,1,.,(*1*)	1st row 1st column
\$L,20,1,1,.,(*2*)	1st row 2nd column
\$R,15,4,4,.,(*3*)	1st row 3rd column
.RD	Begin 2nd row
\$L,15,2,1,.,(*4*)	2nd row 1st column
\$L,20,1,1,.,(*5*)	2nd row 2nd column
\$L,15,8,8,.,(*6*)	2nd row 3rd column
.END	End of Entry command

We can make our Report Entry look more impressive by separating every entry from the next by dashes. Any symbol can be used. Our Report Entry description will now be the following:

```
.RE
.RD
$L,15,2,1,.,(*1*)
$L,20,1,1,.,(*2*)
$R,15,4,4,.,(*3*)
.RD
$L,15,2,1,.,(*4*)
$L,20,1,1,.,(*5*)
$L,15,8,8,.,(*6*)
.RD
```

```
:-----:-----:-----:
.END
```

One last command is needed to tell the computer that we are generating a report. This command is .RG (Report Generator). It MUST precede the .RE command. The following is a complete report generation description:

```
.RG
.RE
```

```
.RD
$L,15,2,1,.,(*1*)
$L,20,1,1,.,(*2*)
$R,15,4,4,.,(*3*)
.RD
$L,15,2,1,.,(*4*)
$L,20,1,1,.,(*5*)
$L,15,8,8,.,(*6*)
.RD
```

```
.END
```

It is often helpful to print headings for each column. The format of the headings can easily be designed using the widths of the columns. If the heading is to appear on every page, its format should immediately follow the Report Generator (.RG) command and precede the Report Entry (.RE) command. The latter is true since the heading is not a part of the entry description. If you only want to print the heading on the first page, it should be typed in before the .RG command. For example, the following format will generate a report with a heading printed on every page:

```
.RG
_____
F Name/Address:   Last Name/City   : Phone/State
_____
```

```
.RE
.RD
$L,15,2,1,.,(*1*)
$L,20,1,1,.,(*2*)
$R,15,4,4,.,(*3*)
.RD
$L,15,2,1,.,(*4*)
$L,20,1,1,.,(*5*)
$L,15,8,8,.,(*6*)
.RD
```

```
.END
```


CHAPTER 17

Editing Existing Records

Sooner or later you will need to change the data in one or more of your existing Maxi Manager II records. Option 2 (Edit Existing Records on the Master Menu allows you to edit your records—inserting, changing, and deleting—one at a time, or by group. You may specify a record to edit or delete with either of its two record numbers, or you can find records using the Multiple Filter Search techniques you learned about in a previous chapter. You may also edit a record directly from a Speed search.

When you select Option 2, the following menu will appear on your video display:

Edit Function	
Code	Function
'E'	- Search & Edit
'D'	- Search & Delete
'R'	- Search & Replace
'S'	- SKIP Field Maintenance
'BREAK'	- Select by Disk Record Number
'CLEAR'	- Return to Menu

ENTER Function Code or Desired Record Number (1-7): . . .

FIGURE 17-1 EDIT MENU

You have six options:

- E - search and edit records. Choosing this option allows you to search and edit records using a Multiple Filter search exactly as described in Chapter 10. Maxi Manager II will find records and present them to you for editing.
- D - Search and delete. Choosing this option allows you to search for and then delete records, also using the Multiple Filter

search. This feature deletes records automatically, without displaying them. Use it with great caution—once a record has been deleted, it cannot be restored.

- R - Search and replace. This option is extremely useful for updating subscription lists, calculating new profit-margin percentages, etc. It uses the multiple filter search to automatically change the data in selected fields. To use this function, enter the field number to be replaced. You will be asked to type in the replacement data (i.e., the new information which will replace the old). Enter it and press <ENTER>. You may specify as many fields as you like. Press <ENTER> when you are finished.

Alternatively, other fields within the record may be specified as replacement data by typing F#n (where F must be in uppercase and n corresponds to the field number you wish to obtain replacement data from). There are a variety of uses for this feature; for example, if you wish to move the contents of a closing balance field into an opening balance field, while simultaneously zeroing out a monthly payment field.

After you have specified the fields to search, and the new data to insert, you will be asked to specify the records to search for with the Multiple Filter search. All calculated fields are recalculated following the replacement operations.

- S - Skip Field Maintenance. This option allows you to specify one or more fields to be skipped during data entry. For example, if you specify field number 1 to be skipped, during the Add New Records function you will not be allowed to enter data to that field. Later, you can go back and use the search and edit or search and replace functions to complete the field's data entry. This feature is useful when adding large numbers of records with identical field information to a data base, or when creating a data base with several unknown fields that will be filled in over a period of time. This option is also used to remove Skip Fields when desired.

<BREAK> - (LDOS users should enter @ <ENTER> instead of <BREAK>)

- Allows you to select a record for editing by disk record number instead of relative record number. Actual disk record numbers are the record numbers which were assigned when you first entered the record into the data base. The Actual Record Number can be thought of as a record's serial number—it never changes. Relative record numbers are the numbers assigned to a record after a sort. This number changes, depending upon where the record is in the data base. A record will have as many Relative Record numbers as it has Key Files.

<CLEAR> - Returns you to the Master Menu. (LDOS users should type <SHIFT> + <CLEAR>.)

Once a record has been selected for manual editing, it is displayed on the screen with the following:

'E' - Edit Record

'D' - Delete Record

'ENTER' - Continue Search

'@' - Return to Sub-menu

You have four options. You may:

* Edit a selected field by typing E <ENTER> and specifying the field number to be edited

* Delete the entire record by typing D <ENTER>

* Return to the Edit Sub-menu by typing @ <ENTER>

* If you are searching for more than one record, go on to search for the next record by merely pressing <ENTER>

If you choose to edit a field, you will be asked to:

ENTER the field number to be changed ('ENTER' = END):

Type in the number of the field you wish to edit and press <ENTER>. Then type in the new data for the field. When you are finished with a field you will be returned to the previous question. When you are finished editing fields in a particular

record, press <ENTER> twice. Maxi Manager II will present the next record to be edited, or if there are no more records to be found, it will return to the Edit Sub-Menu.

CHAPTER 18

Setting Up a New Data Base

We have finally arrived at the reason you bought Maxi Manager II in the first place—designing a new data base. For your first attempt, we recommend that you use the following example to become acquainted with the process of setting up a new data base. This will give you the experience you need to set up a data base that meets your specific needs.

There are three steps to creating a new data base:

1. Plan out what it is to hold and design the data entry form.
2. Enter field data into data entry form.
3. Enter data concerning number of disk drives and Key Files to be used.

The first step is to plan on paper what fields the data base should contain, how long each field should be, what kind of information each field will hold, and finally, what the Data Entry screen should look like. For our example, we'll set up a club mailing list that looks like this:

No.	Label	Type	Length
1	Name	Alphanumeric	24
2	Address	Alphanumeric	24
3	City	Alphanumeric	10
4	State	Alphanumeric	2
5	Zip Code	Numeric	9
6	Weekly dues	F.D.N.	5.2
7	Weeks behind in dues	Numeric	2
8	Total back dues owed	Equation	7.2

Total characters per record: 83

Fields 1 through 5 are self-explanatory; they contain each member's name and address. We will keep track of the member's obligations to the club in fields 6 through 8. Field 6 will be the member's dues, and field 7 will be the number of weeks the member is behind in paying them. From the information stored in these two fields we can arrive at the total amount the member currently owes the club, by multiplying them together and storing the result in field 8.

Next, you must decide how many data disks you will use for your data base. You will need to format one disk for each drive you plan to use for data storage. Format the disk(s) following the procedures in Appendix A, so they will be ready when the program asks for them.

IF YOU INTEND TO STORE DATA IN DRIVE 0

Drives 1 through 3 need only be formatted to prepare them to hold Maxi Manager II data. Because there must always be a disk containing DOS files in Drive 0, if you plan to use it for data storage you must prepare a special data disk containing the DOS files. These files keep the system running when you swap the program disk with the Drive 0 data disk. This disk is sometimes referred to as a minimum system disk, and making it is not difficult. Essentially, you make a backup of your Maxi Manager II diskette and then remove all unneeded files using the KILL command (or PURGE, if available on your DOS). All that is left on the disk are the DOS system files needed to run Maxi Manager II. To simplify these procedures, a special program entitled "MAKEDISK/BLD" has been provided for your use. Consult Appendix I for more specific information on creating minimum system disks.

Because it requires frequent swapping of program and data diskettes, and more importantly, because it will limit the use of several utility programs, it is probably best if you do NOT use Drive 0 for data storage unless you are absolutely certain that you must have the additional storage space.

DEFINING A NEW DATA BASE

Load Maxi Manager II and enter the correct date. When asked to specify the name of the file to use, press <BREAK> (LDOS users type @ <ENTER>). When the Master Menu appears, before doing anything else, switch to the lowercase mode. Do you remember how to do this? If not, refer to the index and reread the appropriate section of this manual. Then choose Option 6 (Define New File) by typing 6 <ENTER>.

After choosing and entering a new filename and password, the following form will appear on your video display:

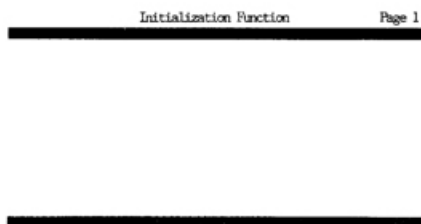


FIGURE 18-1 INITIALIZATION SCREEN

Notice that the form says "Page 1" in the upper right-hand corner. Just as in the sample data base, you can use two pages per record if necessary.

You may position field numbers, labels, and periods for the number of characters each field will hold almost anywhere you like on the form. To isolate particularly important information, or just to make the form more attractive you may also use many of the graphic characters from your BASIC manual.

A FEW RULES

There are a few rules governing where things can be put on the form. You can put several fields on one line, but a field must always end on the same line it started on.

Field numbers must be assigned in ascending order, left to right, top to bottom. In other words you can't put field number five at the top of the page, and field number one somewhere near the bottom.

The fields themselves must adhere to a fairly rigid format:

(Field Number).any # of spaces (Field Label) Any # of spaces(:.....)

Examples:

1.Zip Code :.....

or

1. Zip Code:

(The periods represent the number of characters the field will hold.) Aside from these simple rules, you are free to exercise your creativity!

SPECIAL FUNCTION KEYS

Several keys on your TRS-80 keyboard perform special functions during the new data base initialization function.



- * The arrow keys move the cursor around the screen just as they do with a word processor.
- * <SHIFT> +  (up arrow) returns the cursor to the first position of the first page.
- * <SHIFT> +  (down arrow) + Z takes you to the top position of page two.
- * <ENTER> moves you to the beginning of the next line.
- * <CLEAR> allows you to specify the number of characters the field you are currently setting up will hold. You may also specify characters by typing periods manually—one for each

FIGURE 18-3

We will start at the top of the page by entering the graphics characters which appear just to the left of the first field.

LINE ONE

Press <CLEAR> twice. You will be asked to specify the graphics character to use. Type 143 <ENTER>. You will be asked to enter the number of characters to use. Type 16 <ENTER>.

Press the space bar once to leave a space between the graphics characters and the field number. Then type 1.Name: and press <CLEAR> once. Type in 24 <ENTER> (for the field length) and press the space bar. Press <CLEAR> twice. Type 143 <ENTER> (graphics character) and 15 <ENTER> for the length. The rest of line one should now be filled with graphics characters.

LINE TWO

The cursor should now be on first character of second line. Press <CLEAR> twice and type 143 <ENTER> for the graphics characters and 14 <ENTER> for the length. Type a space and then

2.Address:

Press <CLEAR> and type 24 <ENTER> to specify the field length. Press the space bar to leave a space. Then press <CLEAR> twice, and type 143 <ENTER> for the graphics character and 14 <ENTER> for length.

LINE THREE

The cursor should now be on line three, which will have more than one field on it. Press <CLEAR> twice. Enter 143 <ENTER> for the graphics character and type 7 <ENTER> for the length. Then type a space and

3.City:

Press <CLEAR> once. Type 10 <ENTER> for the field length. Type a

space and then 4.State:. Press <CLEAR> once. Type 2 <ENTER> for the field length.

Type a space then

5.Zip Code:

Press <CLEAR> once and type 9 <ENTER> for the field length. Then type a space and press <CLEAR> twice. Type 143 <ENTER> for the graphics character and 7 <ENTER> for the length.

LINE FOUR

The cursor should now be on the first character of the fourth line. The only thing we will put on it is a solid line of graphics characters to divide the member's address information from dues data. Press <CLEAR> twice and type 131 <ENTER> for the graphics characters and 64 <ENTER> for the length.

LINE FIVE

The cursor should now be at the beginning of the fifth line. We will put both weekly dues and weeks behind in dues on this line. Press <CLEAR> twice and type 143 <ENTER> for the graphics character and 8 <ENTER> for the length.

Then type a space and

6.Weekly Dues:

Enter the field length manually this time by typing 5 periods. Type a space and

7.Weeks Behind In Dues:

Then type 2 periods. and a space. Press <CLEAR> twice and type 143 <ENTER> for the graphics character and 9 <ENTER> for the length.

LINE SIX

The cursor should now be at the beginning of the sixth line. To give the eighth field significance, We are going to box it in completely with graphics characters.

Press <CLEAR> twice. Type 191 <ENTER> for the graphics character and 16 <ENTER> for the length. Press <CLEAR> twice again and type 143 <ENTER> for the graphics character and 32 <ENTER> for the length.

Press <CLEAR> twice. Type 191 <ENTER> for the graphics character and 16 <ENTER> for the length.

LINE SEVEN


The cursor should now be at the beginning of the eighth line. Press <CLEAR> twice and type 191 <ENTER> and 16 <ENTER>. Type a space and

8.Total Back Dues Owed:

Type seven periods for the field length. Type a space. and press <CLEAR> twice. Type 191 <ENTER> and 16 <ENTER>.

LINE EIGHT

The cursor should now be at the beginning of the ninth line. Press <CLEAR> twice and type 143 <ENTER> and 64 <ENTER>.

Whew! You have just completed formatting the data entry screen for your new data base. Look it over to make sure there are no errors. If there are, correct them. Once the form looks right, press <BREAK> (LDOS users type <SHIFT> +  (DOWN ARROW) +) to go on to the next step. A few moments later, the following will appear on your video display:

MAXI MANAGER Field Definition Phase

Code	Function
0	- Alphanumeric (Default)
1	- Numeric
2	- Equation

Field Label #1 = None
Field Length = 24
ENTER the Field Type Code: .

The Field Definition phase defines (one field at a time) what type each field is. Fields one through four will be Alphanumeric, so type 0 <ENTER> for each.

Notice that when entering field three, two more options were added to the menu:

- 3. Fixed Decimal Numeric
- 4. Date

These options didn't appear before because Fixed Decimal Numeric fields cannot be longer than 17 characters, and Date Fields must be exactly 8 or 10 characters long. These options only appear when they are able to be used. AUTO Date fields, fields that are AUTOMatically filled in by Maxi Manager II with the day's date, must be 8 characters in length. When you specify Date for a 8 character field, the program will ask Auto Date (Y/N), answer Y <ENTER> for an AUTO Date field.

Field number 5 is Numeric, so type 1 <ENTER>. Field number 6 is Fixed Decimal Numeric, so type 3 <ENTER>. After specifying a field as Fixed Decimal Numeric, you will be asked to enter the number of decimal places. Since this field will be holding a dollar figure, type 2 <ENTER>.

Field number 7 is numeric, so Type 1 <ENTER>. Field number 8 is an Equation Field. Type 2 <ENTER>. You will be asked to enter the equation. Maxi Manager II allows up to 64 characters to define an equation for a field. You may use any mathematical function available in Level II or Model III BASIC except exponentiation (.). Specify a field number in the equation by preceding it with "F#". To figure the total back dues owed, we will multiply field six by field seven. Type:

F#6*F#7 <ENTER>

Press 2 <ENTER> for the number of decimal places, this will be a dollar amount. When you are done entering field definitions, you will be asked:

Is this correct (Y/N)?

If you made a mistake, or one of the fields you entered didn't appear in this phase, type N <ENTER> and you will be returned to the Initialization Function (page one of the screen formatting program) and you may correct any errors. Type <BREAK> (<SHIFT> + **↓** + for LDOS users) when you are through making changes and you may then reenter the field definitions.

If you type Y <ENTER> you will be asked to specify the number of disk drives for data storage (1-4). Remember not to include the drive that holds the program disk unless you have decided that you really need the space.

Next, you are asked to specify the drive number of the first data disk (0-3). Generally, this will be 1, unless you are also using Drive 0 for data.

You are next asked to specify the number of Key Files you wish to have available. Remember that each Key File takes up valuable disk space that could otherwise be used for data storage, so don't use more Key Files than you really need.

THE FINAL STEP

Next, you will be asked to insert blank formatted disks in each drive you will be using for data storage. Use the disks you prepared at the beginning of this chapter. If you are using Drive 0 for data storage, replace the program disk with a minimum system data disk at this point. Press <ENTER>. Maxi Manager II will examine each disk's directory to obtain the amount of storage space available. Using this information, it will determine how much the data base can hold. When it is done calculating you will be informed of the maximum number of records that the data base (as currently) defined will hold. This maximum figure assumes that you will not be putting anything else on the disk(s) except this data base. If you wish

to reserve extra space for another data base, Document Files, or other programs, specify a smaller number than this maximum figure when the option is presented.

After you have specified the number of records to hold, the data disks are initialized. This process lasts from a few seconds to a couple of minutes, depending on how large the data base is and how many drives are involved. When it is done, your new data base is ready to use. You are returned to the very beginning of the Maxi Manager II loading sequence and asked to enter the name of the data base you wish to use. To load the new data base you just created type its name and press <ENTER>.

NUMERIC FIELDS

When specifying a numeric field, you will be asked to enter the number of decimal places to use. If you type 0 <ENTER>, the field will accept whatever is entered (123.456, 12-34-567, 1234567, etc.). If you type 99 <ENTER>, the field will automatically round off any numbers entered into it to zero decimal places.

MISCELLANEOUS HINTS

Always try to keep each field's length as short as possible. The longer each record, the fewer the records that will fit in a data base. For example, suppose we were to define our data base to run on a typical two-drive system. If we were to increase each record's size by only two characters, the final data base would hold about 100 fewer records!

MODIFYING A DATA BASE

Occasionally you will feel the need to alter a data base, without starting over again from scratch and reentering all the data. Maxi Manager II includes a pair of utility programs which allow you to add new fields, delete unneeded fields and enlarge, shorten, or rearrange existing fields. For instruction in using these programs, refer to Chapter 21.

CHAPTER 19

Utility Programs

Maxi Manager II includes several utility functions and programs which greatly enhance its power and versatility. Because of the rather intimidating amount of information we have to present on the subject, we have broken the discussion of utilities into several manageable chapters. In this chapter, we will discuss the basic utility functions. Following chapters will discuss in detail the utility extension programs.

To gain access to the utilities, select Function Code #7 (Utility Programs) from the Master Menu. The following menu will appear:

Utility Programs Function	
Code	Function
1	- Extension Programs
2	- Calculate Maximum # of Records
3	- Edit Initialization Parameters
4	- Allocate Disk Capacity Variables
5	- Return to Menu

ENTER Function Code desired: .

UTILITY MENU FIGURE 19-1

For now, let's put aside Function Code #1 (Extension Programs) and discuss the other options on this menu.

WHAT IF?

Function Code #2 (Calculate Maximum # of Records) performs a "what if?" analysis. You are asked a series of questions to determine how much space your data base will require, and then told exactly how many records such a data base will hold. The questions you are asked are:

Number of disk drives to be used for DATA storage (1-4)?
Drive number of first DATA disk (0-3)?
Number of free granules available on each disk drive?
Number of Key Files (1-5)?
Number of characters per record (1-800)?

Only one of these should present any difficulty—the number of free granules available. A granule is a measure of disk storage space, and a free granule is a granule which is not currently being used to store anything. To discover how many free granules are available on a given disk, use the DOS FREE or DIR command. Somewhere on the video display will be the number of free granules. This is the number you should use. Bear in mind that data disks, minimum system disks, and program disks will all have different numbers of free granules. Also, TDOS does NOT offer any means of determining the number of free granules available. You can look at the disk with a copy of DOSPLUS, or you can transfer Maxi Manager II to a complete operating system which offers this capability.

INITIALIZATION PARAMETERS

Function Code #3 (Edit Initialization Parameters) allows you to change a variety of program parameters. The first three are for the Screen Print Function, and they tell Maxi Manager II:

- * the number of Null characters to send to the printer
- * whether the printer is connected to the RS-232-C port,
a TRS-232-C port, or the parallel port.

Most users will have a printer connected to the parallel port, so they needn't change any of these parameters.

The next parameter determines whether or not the program will verify proper mounting of data disks. Most users should leave this option as is—the time saved by not verifying correct mounting is insignificant in most applications. For a single-drive system, the program must always be set to verify.

The next two parameters turn on or off an audit trail feature used when adding and editing records.

- * When adding records this feature prints the Relative and Actual Disk Record numbers of every new record added to the data base.
- * When editing records this feature prints the Actual Record number that was edited, and a comparison showing the old data for each field, and the new data that replaced it. These features are useful in tracking the activity of data entry personnel and also provide an excellent and inexpensive backup in case something nasty happens to your data files.

WHICH DOS ARE YOU USING?

Because each DOS leaves a slightly different amount of disk space available for data files, it is important for Maxi Manager II to know which one you are using. Function Code #4 (Allocate Disk Capacity Variables) lets you tell Maxi Manager II what DOS you are using to aid it in determining system capacities. After choosing this option, the following will appear on the video display:

Disk Operating System and Disk Drive Capacity Function	
Code	Function
1	- TRSDOS 2.3, NEWDOS 2.1
2	- NEWDOS/80 Versions 1 or 2
3	- DRDOS
4	- LIDS (Single Density)
5	- LIDS (Double Density)
6	- DOSPLUS (Single Density)
7	- DOSPLUS (Double Density)
8	- DOSPLUS (Hard Disk)
9	- Manual Configuration
10	- Return to Menu

ENTER Function Code desired: .

FIGURE HERE FIGURE 19-2

This list may be slightly different on the version of Maxi Manager II that you are using, but it represents all the DOS's that we have tested Maxi Manager II with. Specify the DOS you

will be using and press <ENTER>. If the DOS you are planning to use is not included on this list, it MAY function correctly, but you will have to enter the parameters yourself using the Manual Configuration option.

CHAPTER 20

Extension Programs

Now that we've discussed every option on the Utility Programs Function Menu except the first one, we'll return and discuss it in detail. After selecting Function Code #1 (Extension Programs), the following menu will appear:

Extension Programs Function	
Code	Function
1	- Docufile
2	- Document File Editor
3	- Recover Mutilated Data File
4	- Extract Data from Existing Data File
5	- Merge Data into Existing Data File
6	- Transfer Data into VisiGalc File
7	- Transfer Data into Nonescript File
8	- Print Multi-Column Mailing Labels
9	- Miscellaneous Extension Program
10	- Return to Utility Programs Menu

ENTER Function Code desired: .

FIGURE 20-1 UTILITY PROGRAMS LIST

Each option on this menu represents a utility program designed to be used with Maxi Manager II. A brief description of each option follows:

* Function Code #1 (Docufile)

A program designed to simplify the creation of Document Files.

* Function Code #2 (Document File Editor)

A program which assists in the creation and editing of Document Files. (Refer to Chapter 25 for further details)

* Function Code #3 (Recover Mutilated Data File)

A Key File restoration program which can often recover apparently "blown" data bases.

* Function Code #4 (Extract Data from Existing Data File)

A program which extracts user-specified data from an existing data base and stores it on disk or cassette tape. (Refer to Chapter 21 for further details.)

* Function Code #5 (Merge Data into Existing Data File)

A data merging program used to transfer data (from the disks or cassette tapes produced by the data extraction program) to other Maxi Manager II files. (Refer to Chapter 21 for further details)

* Function Code #6 (Transfer Data into VisiCalc File)

A program which transfers data in a user-specified format to a VisiCalc-readable file. Operates in a similar manner to the Extract feature above. Refer to Chapter 22 for further details.)

* Function Code #7 (Transfer Data into Newscript File)

A data transfer program which creates a Newscript-readable file, allowing Newscript to print Maxi Manager II data instead of the PFF. (Refer to Chapter 23 for further details.)

* Function Code #8 (Print Multi-Column Mailing Labels)

A multi-up label printing utility which allows Maxi Manager II to print on labels up to four across. Extremely easy to use and highly recommended for any label printing tasks! (Refer to Chapter 24 for further details.)

* Function Code #9 (Miscellaneous Extension Program)

This function allows you to run an extension program not listed on the menu. You are asked to enter the name of an extension program, and if it is found, it will be run.

* Function Code #10 (Return to Utility Programs Menu)

This function returns you to the first Utility Menu.

DOCUFILE

The uses of DOCUFILE have already been discussed in detail in Chapters 13 and 14, so we won't add anything here.

DOCUMENT FILE EDITOR

Instructions on the use of this program may be found in Chapter 25.

RECOVERY OF MUTILATED DATA FILES

This unique feature recovers Key Files damaged by worn disks, dirty or misaligned drive heads, and other disk hardware problems. A recovery should be performed whenever you suspect that a Key File has been damaged. A sure sign that this has occurred is a sudden inexplicable duplication of data records. Theoretically this type of problem should never occur, but when it does it is invariably associated with the disk hardware or a worn disk.

No special knowledge is required to perform a Key File recovery. After loading it from the Extension Programs Function Menu, the following will appear on your video display:

MAXI MANAGER RECOVERY UTILITY

Code	Function
1	- Recover DATA Files
2	- Return to Utility Program Menu
3	- Close Files and End

ENTER Function Code desired: .

FIGURE 20-2 RECOVERY MENU

Select Function Code #1 (Recover DATA Files). You will be asked to enter the file name and password of the damaged file. Next you will be asked to insert the data disks into their proper drives (if they aren't there already). The program will then begin rebuilding Key Files. Don't be alarmed if nothing appears to be happening! Most of the work takes place in memory. Every 20-30 seconds the disks will spin if everything is working as it should be.

The second step in data recovery is rebuilding the Spare Idle Linked List. Don't let the imposing title worry you—it is essentially a list of deleted records. During this operation, the video screen will display "SEARCHING" as it scans the data file looking for a number followed by an asterisk in the first field of each record. This is the symbol used by Maxi Manager II to indicate a spare (deleted) record.

WARNING!

Any data records with a number followed by an asterisk in the first field will be deleted when the recovery utility is run. Avoid this combination when setting up any data base!

When the recovery operation is complete you will be returned to the Extension Programs Function Menu. All Key Files will be renamed to "unassigned" and all Sorts must be performed again.

CHAPTER 21

Extracting and Merging Data

EXTRACT2

The EXTRACT2 program is used to view existing field attributes, rearrange the fields (if required), and extract data records for input to another data base. The data is stored temporarily, with disk or cassette tape as a transport medium. To use the disk option, you need to have one more drive than the data base requires. The tape option is included because it is the only large-scale data storage device certain to be shared by all MAXI MANAGER users. Several options are available in defining the records to be extracted from the data base.

After loading the EXTRACT2 program (as described in the introduction to this manual) you will be asked to enter the MAXI MANAGER II's filename and password. This must be the same filename and password used with the data base from which you are extracting records. Following entry of the password, your screen will look something like this:

MAXI MANAGER EXTRACT UTILITY	
Code	Function
1	- Extract (All Records)
2	- Extract (Selected Range)
3	- Extract (Multiple Filter Search)
4	- Print MAXI MANAGER file definition
5	- Select EXTRACT Data Storage Media
6	- Return to Utility Program Menu
7	- Close Files and End

ENTER Function Code desired: .

FIGURE 21-1 EXTRACT2 MAIN MENU

The first option to pick is option #5 (Select EXTRACT2 Data Storage Media). After selecting this option you will be prompted:

Store EXTRACT2 data on disk (Y/N)?

If you type Y <ENTER> for yes, the following prompt will appear on your video display:

Disk drive to be used to store EXTRACT2 data (0-7)

Enter the disk drive number that will be used to store the EXTRACT2 data and press <ENTER>. The drive may be any format and density that is compatible with the operating system you are using for the MAXI MANAGER II program. As a word of caution, be sure to have a sufficient supply of blank EXTRACT2 disks before you actually begin to perform an EXTRACT2. Failure to do so could cause you to abort the EXTRACT2 (to make additional EXTRACT2 data disks) and start over again. The number of extract disks can be roughly estimated at the same number as the amount of MAXI MANAGER II data disks required to hold the reconfigured MMS file, plus one. If minimum system disks are involved, the number could be substantially greater.

If you do not have a spare disk drive available for use as an EXTRACT2 data disk (or to read the EXTRACT2 data from later during a MERGE2 into the new data base), answer the initial disk storage question with 'N' <ENTER> for no.

ENTER the desired Cassette Baud Rate (500 or 1500)

If you plan to use the tapes with a Model I computer at any point, type 500 <ENTER>. If you will only be using a Model III, type 1500 <ENTER> to take advantage of the higher speed.

After answering these questions the main menu will appear again.

Option 3 is identical in operation to its PRINT counterpart described on page 10-1 of the MAXI MANAGER II Users Manual. Option 1 will be used to EXTRACT2 the data needed from ALL the records in the data base. Option 2 will be used to EXTRACT2 from a range of records that you will specify by entering the beginning and ending record numbers for the range. After describing your EXTRACT2 options (All/Selected Range/Multiple

Key Search), the screen will display the following for the Sample Data Base:

```

MAXI MANAGER EXTRACT UTILITY
Output Data Base will be organized as follows:

1-Product Name (28)          11-Retail Price (Cal) (89.2)
2-Product Code (12)         12-Manufacturer (30)
3-Quantity on hand (-3,0)    13-Representative (26)
4-Quantity ordered (-4,0)    14-Address (25)
5-Cost per unit (-10,2)      15-City (18)
6-Date of last order (D-)    16-State (2)
7-Inventory Value (E11.2)    17-Zip Code (-5,0)
8-Purchase Price (E11.2)     18-Comments (40)
9-Percent Markup (-4,0)      19-UNASSIGNED
10-Retail Price (Act) (-9.2) 20-UNASSIGNED

Enter the field number you wish to change ('ENTER' = End): .

```

FIGURE 21-2 DATA BASE ORGANIZATION

Field lengths are enclosed within the parenthesis. Numeric fields are preceded by a hyphen (-) sign, Rounded Numeric fields are presented as Numeric fields with the number of decimal places following the decimal point, Date Fields are represented as 'D-' or 'D+' and Equation fields are the same as Rounded Numeric fields except that an 'E' is substituted for the hyphen.

If the data from the EXTRACT2 data base is in the same format as the data will be in the MERGE2 data base, no further action is needed. If, however, the MERGE2 data base contains fewer fields than the EXTRACT2 data base, some fields from the EXTRACT2 data base must be deleted. For example, if a new data base containing only Manufacturer, Representative, Address, City, State, and Zip Code is desired, then the EXTRACT2 data base must be reorganized.

Assuming that the MERGE2 data base will contain the previously mentioned fields along with one new field, the reorganization process is performed as follows:

Answer the prompt:

Do you wish to reorganize the Data Base (Y/N)?

with 'Y' <ENTER>. Next you will be given the prompt:

Enter the field number you wish to change ('ENTER'=End):

Type '1' <ENTER>. The next prompt will be:

ENTER the replacement field number ('N'=New 'D'=Delete):

Type '2' <ENTER>. Now the video display should be:

```

MAXI MANAGER EXTRACT UTILITY
Output Data Base will be organized as follows:

1-Manufacturer (30)      11-Retail Price (Cal) (B9.2)
2-Product Code (12)     12-Manufacturer (30)
3-Quantity on hand (-3.0) 13-Representative (26)
4-Quantity ordered (-4.0) 14-Address (25)
5-Cost per unit (-10.2)   15-City (18)
6-Date of last order (D-) 16-State (2)
7-Inventory Value (B11.2) 17-Zip Code (-5.0)
8-Purchase Price (B11.2)  18-Comments (40)
9-Percent Markup (-4.0)   19-UNASSIGNED
10-Retail Price (Act) (-9.2) 20-UNASSIGNED

Enter the field number you wish to change ('ENTER' = End): .

```

FIGURE 21-3 REORGANIZED DATA BASE

Continue the process, typing:

```

2 <ENTER>
13 <ENTER>
3 <ENTER>
14 <ENTER>
4 <ENTER>
15 <ENTER>
5 <ENTER>
16 <ENTER>
6 <ENTER>
17 <ENTER>

```

The screen should now appear as follows:

```

MAXI MANAGER EXTRACT UTILITY
Output Data Base will be organized as follows:

1-Manufacturer (30)      11-Retail Price (Cal) (B9.2)
2-Representative (26)    12-Manufacturer (30)
3-Address (25)           13-Representative (26)
4-City (18)              14-Address (25)
5-State (2)              15-City (18)
6-Zip Code (-5.0)        16-State (2)
7-Inventory Value (B11.2) 17-Zip Code (-5.0)
8-Purchase Price (B11.2)  18-Comments (40)
9-Percent Markup (-4.0)   19-UNASSIGNED
10-Retail Price (Act) (-9.2) 20-UNASSIGNED

Enter the field number you wish to change ('ENTER' = End): .

```


FIGURE 21-4 REORGANIZED DATA BASE #2

Notice how fields 1-6 now contain the reorganized data fields. We must now assign a new field at field location 7. This is done by typing:

```
7 <ENTER>
N <ENTER>
```

The screen should now appear as:

```

MAXI MANAGER EXTRACT UTILITY
-----
Output Data Base will be organized as follows:

1-Manufacturer (30)      11-Retail Price (Gal) (B9.2)
2-Representative (26)   12-Manufacturer (30)
3-Address (25)          13-Representative (26)
4-City (18)             14-Address (25)
5-State (2)             15-City (18)
6-Zip Code (-5.0)       16-State (2)
7-NEW                   17-Zip Code (-5.0)
8-Purchase Price (E11.2) 18-Comments (40)
9-Percent Markup (-4.0) 19-UNASSIGNED
10-Retail Price (Act) (-9.2) 20-UNASSIGNED

Enter the field number you wish to change ('ENTER' = End): .
```

FIGURE 21-5 REORGANIZED DATA BASE #3

Now we must delete all unused fields by typing:

```

8 <ENTER>
D <ENTER>
9 <ENTER>
D <ENTER>
10 <ENTER>
D <ENTER>
11 <ENTER>
D <ENTER>
12 <ENTER>
D <ENTER>
13 <ENTER>
D <ENTER>
14 <ENTER>
D <ENTER>
15 <ENTER>
D <ENTER>
16 <ENTER>
```

D <ENTER>
 17 <ENTER>
 D <ENTER>
 18 <ENTER>
 D <ENTER>

The screen is finally in the order desired.

```

MAXI MANAGER EXTRACT UTILITY
Output Data Base will be organized as follows:

1-Manufacturer (30)      11-UNASSIGNED
2-Representative (26)   12-UNASSIGNED
3-Address (25)          13-UNASSIGNED
4-City (18)             14-UNASSIGNED
5-State (2)             15-UNASSIGNED
6-Zip Code (-5,0)       16-UNASSIGNED
7-NEW                  17-UNASSIGNED
8-UNASSIGNED            18-UNASSIGNED
9-UNASSIGNED            19-UNASSIGNED
10-UNASSIGNED           20-UNASSIGNED

Enter the field number you wish to change ('ENTER' = End): .
  
```

FIGURE 21-6 REORGANIZED DATA BASE #4

Press <ENTER> to signify the end of field number changes. The screen will prompt you with:

Do you wish to reorganize the Data Base (Y/N)?

This is your last chance to make changes. If you answer 'Y' <ENTER>, you will revert back to the field number change prompt. A 'N' <ENTER> response will cause one of the following prompts to appear:

ON DISK:

Mount the EXTRACT2 storage disk in drive #x now.

Depress 'ENTER' when ready

You should now load a formatted blank Minimum System or Data disk into the disk drive specified for this purpose earlier in the program. The EXTRACT2 program will begin storing data on the EXTRACT2 storage disk until either the EXTRACT2 completes or the EXTRACT2 data disk becomes full. When the latter occurs, you

will be instructed to:

Swap EXTRACT2 data storage disk now, if necessary.

Depress 'ENTER' when ready

If the disk is full, remove the existing EXTRACT2 data disk and load in a new one.

ON TAPE:

Insert the TAPE cassette now.

Depress 'ENTER' when ready

Load a blank tape in the cassette recorder and press <ENTER>. Be sure that tape recorder volume was properly set before you reached this stage. Also be sure that you will not be attempting to record over the leader portion of the tape. We recommend C-30 or longer tapes, to ensure that you don't run out of tape in the middle of an EXTRACT2. Use only high quality tapes! The few cents you may save by using cheap cassette tape will easily be lost if your tape starts dropping out data and you have to start over again.

Approximately 32,000 bytes of data will be transmitted to the cassette tape at a time. When this threshold is reached, you will be asked to:

Swap cassette tapes now, if necessary.

Depress 'ENTER' when ready

If you feel the existing cassette can hold another 32,000-byte session, press <ENTER> and let the EXTRACT2 continue. If the tape may run out before the full 32,000-byte limit is reached, remove the existing cassette and load in a new one. Don't forget to advance it past the leader.

ENDING THE EXTRACT2

When all requested data has been extracted, you will be returned to the initial EXTRACT2 UTILITY MENU. At this point you can either return to the Utility Program Menu (option 6), perform another EXTRACT2 (options 1-3), or Close Files and End (option 7).

MERGE2

The MERGE2 program reads disks or cassette tapes created by the EXTRACT2 program and merges data retrieved from disks or tapes into an existing MAXI MANAGER II data base. Disk is the recommended storage media for use with the EXTRACT2 and MERGE2 programs. A tape option is also available for use with either of the two programs as it is the only large scale data storage device certain to be shared by all MAXI MANAGER II users.

As was previously stated, the MERGE2 program merges data into an existing data base. If you are reorganizing or enlarging a data base, you must initialize the new data base (as it will exist when you complete the MERGE2) using the standard MAXI MANAGER II Initialize New File function (Option 6 from the Main Menu). For purposes of discussion, we will refer to this existing or new data base as the MERGE2 data base.

If the MERGE2 data base is to have more fields (or more characters per field) than the old data base, it will hold fewer records than the old data base. If this creates a problem, you have two options. You may:

A. Add more disk drives (if your DOS permits it). Some operating systems support up to seven drives. MAXI MANAGER II can access any four.

B. Split the data base into two or more data bases.

If you can't or won't add more drives, and the new data base requires more storage space than the original MMS format you EXTRACT2ED from, you should make several backup copies of the MAXI MANAGER II program and data disks you will be merging into before actually beginning a MERGE2. The program will ask you to insert a new set of diskettes when necessary.

The only restriction placed on the MERGE2 file that you will be merging data into is that it must have the same number of fields as the EXTRACT2 data that was recorded on either disk or cassette tape. If we use the EXTRACT2 data created in the

EXTRACT2 example, we must also use a MAXI MANAGER II (MERGE2) file containing a total of seven fields. The quantity of fields is the ONLY requirement placed on the MERGE2 file.

You will notice that the last field in the data base was labeled 'NEW.' The data for the 'NEW' field is stored on the cassette tape as a single blank character. When merged into the MERGE2 data base, the corresponding field (in this case field number 7) will be filled with blank characters.

If existing data fields are being enlarged, you should initialize the new data base with fields of the required. After the data is merged into the MERGE2 data base, the field will contain the old data with blank characters added to the left or right, depending upon what type of field it is.

Fields which you are reducing in size will contain the old data cut off at the right for alphanumeric fields, and at the left for numeric fields.

Any fields defined as Equation Fields will have their values calculated as the data is merged into the new (MERGE2) data base.

RUNNING MERGE2

After loading the MERGE2 program (as described in the introduction to this manual) you will be asked to enter the data file's filename and password, which should be the same filename and password used for the MERGE2 data base. Following entry of the password, you will be asked whether you wish to:

Retrieve EXTRACT2 data from disk (Y/N)?

If you type 'Y', the following prompt will appear on your video display.

Disk drive to be used to retrieve EXTRACT2 data (0-7)

Enter the disk drive number that will be used to read the

EXTRACT2 data disk. The drive may be any format and density that is compatible with the operating system you are using for the MAXI MANAGER II program.

If you are retrieving EXTRACT2 data from cassette tape, answer the initial disk storage question with N for no. Model III users will be asked to:

ENTER the desired Cassette Baud Rate (500 or 1500)

If you are using tapes made with a Model I computer, type 500 <ENTER>. Model III tapes type 1500 <ENTER>.

The following menu will appear:

MAXI MANAGER MERGE UTILITY	
Code	Function
1	- Merge New Records
2	- Select MERGE Data Source Media
3	- Return to Utility Program Menu
4	- Close Files and End

ENTER Function Code desired: .

FIGURE 21-7 MERGE2 MAIN MENU

To MERGE2 extracted data diskettes or cassette tapes, choose option 1 (Merge New Records). You will be asked to do one of the following:

ON DISK:

Mount the MERGE2 data source disk in drive #x now.

Depress 'ENTER' when ready

You should now load an EXTRACT2 data diskette into the disk drive specified for this purpose earlier in the program. The MERGE2 program will begin retrieving data from the EXTRACT2 data diskette and will store the data onto the MAXI MANAGER II data diskettes until either the MERGE2 completes or the MMS data disk(s) became full. When the latter occurs, you will be

instructed to:

Mount a new set of data disks now!!

Depress 'ENTER' when ready

Remove the full MAXI MANAGER II data disk(s) and load a new one.

ON TAPE:

Insert the TAPE cassette now.

Depress 'ENTER' when ready

You should now load an EXTRACT2 tape into the cassette recorder and press <ENTER>. Be sure that the tape recorder's volume control was properly set before you reached this stage.

Approximately 32,000 bytes of data will read from the cassette tape at a time. Upon completion of an EXTRACT2 tape read, you will be returned to the MERGE2 UTILITY MENU.

ENDING THE MERGE2

If additional EXTRACT2 tapes are to be merged, repeat the proceeding steps as required. When all requested data has been merged, you will be returned to the initial MERGE2 UTILITY MENU. At this point you can either return to the Utility Program Menu, perform another MERGE2, or Close Files and End.

TECHNICAL INFORMATION

The MERGE2 and EXTRACT2 programs utilize a common data format that we shall refer to as the MAXI-DIF of MAXI DATA INTERCHANGE FORMAT. With the aid of the MAXI-DIF, data can easily be transferred into or out of MAXI MANAGER II data files. The possibilities are endless! At last, owners of other data base software packages can transfer data into a MAXI MANAGER II data base. The MAXI-DIF requires the use of MMSBASIC which is described in the Technical Reference Manual supplied with the MAXI MANAGER program. Two formats are available - tape and disk. The principles regarding the use of each format are identical; only the input/output commands are different. Let's explore the EXTRACT2 format first.

EXTRACT2 MAXI-DIF FORMAT

When the EXTRACT2 output format has been defined, the EXTRACT2 program first calculates the total number of characters which make up a single record. New fields are allocated one character only as a means of conserving storage space. Once the total number of characters is known, EXTRACT2 then determines if the number of characters is greater than 246. If so, EXTRACT2 divides the total by 2 and again checks to see if the two parts are less than 246. This process continues until a part of data is less than 246 characters.

At this time, a second check is made to determine if each part of the data is an integer. If not, space characters are added to the total record length until each part is equal in size and is an integer value. In further discussions of this subject, we shall refer to the parts as blocks. Assuming that integer value D2 equals the number of fields in the EXTRACT2 record, integer array AF(x) equals the field length, and x equals a valid field number, the following BASIC subroutine will calculate the number of blocks (TL) and the block size (TK):

```
90 DIM AF(50),DR$(50)
100 GT = 0 'Counting variable
```

```

110 FOR I = 1 TO D2
120 GT=GT + AF(I)
130 NEXT I
140 TL = 1 'Initialize block counter
150 IF GT/TL -> 246 THEN TL = TL + 1:GOTO 150
160 IF GT/TL <- -> INT(GT/TL) THEN GT = GT + 1: GOTO 160
170 TK = GT/TL
180 RETURN

```

Remember, for new fields, AF(x) equals one. At this point, depending on whether disk or tape is used, a header recorder can be written. Each EXTRACT2 tape session or EXTRACT2/DAT disk file begins with a header record defined as follows:

ON TAPE

```

200 PRINT#-1,D2,AF(1),AF(2),AF(3),AF(4),AF(5),AF(6),AF(7),
    AF(8),AF(9),AF(10),AF(11),AF(12),AF(13),AF(14),AF(15),
    AF(16),AF(17),AF(18),AF(19),AF(20),AF(21),AF(22),AF(23),
    AF(24),AF(25)
210 PRINT#-1,AF(26),AF(27),AF(28),AF(29),AF(30),AF(31),AF(32),
    AF(33),AF(34),AF(35),AF(36),AF(37),AF(38),AF(39),AF(40),
    AF(41),AF(42),AF(43),AF(44),AF(45),AF(46),AF(47),AF(48),
    AF(49),AF(50),TL,TK
310 RETURN

```

ON DISK

```

200 OPEN"O",1,"EXTRACT2/DAT:d" 'd equals the drive number
210 PRINT#1,D2
220 FOR I=1 TO D2
230 PRINT#1, AF(I)
240 NEXT
250 PRINT#1, TL, TK
260 RETURN

```

Next, string blocks are created equal in quantity to integer variable TL and equal in size to integer variable TK. For example:

```

300 FOR I=1 TO TL

```

```

310 GT$(I) = STRING$(TK,32)
320 NEXT I
330 RETURN

```

Finally, we may begin to retrieve data and write it into the MAXI-DIF disk or tape file. As is the case with MAXI MANAGER II data files, the source data strings must always be equal in length to the field length variable AF(x). Failure to maintain this constant relationship will cause invalid data to be written to (and later retrieved from) the MAXI-DIF data file which is always assigned the file name EXTRACT2/DAT by the EXTRACT2 program. Assuming that the string variable array DR\$(x) contains the source data, the MMSBASIC GLUE command must be called to pack the data as follows:

```

400 NAME GLUE(D2,TL,DR$(1),GT$(1))

```

Now that the data has been GLUED together, it may be written to disk or tape. One last hurdle must be overcome when dealing with cassette tape. The tape input routines do not allow the existence of a comma with a data record. Any that do exist must be replaced. The following routine performs the task admirably:

```

500 FOR I=1 TO TL
510 ZZ=INSTR(GT$(I),44)
520 IF ZZ=0 THEN 550
530 MID$(GT$(I),ZZ,1)=CHR$(211)
540 GOTO 510
550 NEXT I
560 RETURN

```

Remember, this needs to be done only if the output medium is cassette tape. Now, we can finally write our blocks to disk using one of the following routines:

TAPE

```

600 FOR I=1 TO TL
610 PRINT#-1,"*" + GT$(I) + "*"
620 NEXT I
630 RETURN

```

DISK

```
600 FOR I=1 TO TL
610 PRINT#1,GT$(I)
620 NEXT I
630 RETURN
```

Last but not least, an END OF FILE (EOF) block must be written at end of each MAXI-DIF file. The EOF subroutine is:

TAPE

```
700 FOR I=1 TO TL
710 PRINT#-1,"###"
720 NEXT I
730 RETURN
```

DISK

```
700 FOR I=1 TO TL
710 PRINT#1,"###"
720 NEXT I
730 RETURN
```

MERGE2 MAXI-DIF FORMAT

Redaing data from a MAXI-DIF file is quite simple. One merely reverses the step described earlier under the EXTRACT2 MAXI-DIF FORMAT heading to repartition the data back into individual field components. Rather than explain each step of the process, the two programs than follow provide all that is required to read a MAXI-DIF data file.

TAPE

```
90 DIM AF(50),DR$(50)
100 'INITIALIZE ALL CONSTANTS AND BLOCKING STRINGS
110 'THIS ROUTINE IS PERFORMED ONCE PER FILE
120 INPUT#1,D2,AF(1),AF(2),AF(3),AF(4),AF(5),AF(6),AF(7),
    AF(8),AF(9),AF(10),AF(11),AF(12),AF(13),AF(14),AF(15),
```

```

AF(16),AF(17),AF(18),AF(19),AF(20),AF(21),AF(22),
AF(23),AF(24),AF(25)
130 INPUT#1,AF(26),AF(27),AF(28),AF(29),AF(30),AF(31),
AF(32),AF(33),AF(34),AF(35),AF(36),AF(37),AF(38),
AF(39),AF(40),AF(41),AF(42),AF(43),AF(44),AF(45),
AF(46),AF(47),AF(48),AF(49),AF(50),TL,TK
200 FOR I=1 TO D2
210 DR$(I)=STRING$(AF$(I),32)
220 NEXT I
230 FOR I=1 TO TL
240 GT$(I)=STRING$(TK,32)
250 NEXT I

300 'READ THE DATA BLOCKS, ENCODE BLOCKS WITH COMMAS,
305 'CUT INTO INDIVIDUAL FIELD ELEMENTS
310 'THIS ROUTINE IS REPEATED UNTIL AN END OF FILE (EOF)
315 'BLOCK IS ENCOUNTERED
320 FOR I=1 TO TL
330 INPUT#-1,FT$
340 LSET GT$(I)=MID$(FT$,2,LEN(FT$)-2)
350 ZZ=INSTR(GT$(I),211)
360 IF ZZ=0 THEN 390
370 MID$(GT$(I),ZZ,1)=CHR$(44)
380 GOTO 350
390 NEXT I
400 IF LEFT$(GT$(I),5) <> "#####" THEN RETURN
410 'END OF FILE REACHED - SET A FLAG
420 RETURN

```

DISK

```

90 DIM AF(50),DR$(50)
100 'OPEN EXTRACT2/DAT FILE, INITIALIZE ALL CONSTANTS AND
110 'BLOCKING STRINGS
120 'THIS ROUTINE IS DONE ONCE PER FILE
130 OPEN "I",1,"EXTRACT2/DAT:d":' d EQUALS THE DRIVE NUMBER
140 INPUT#1,D2
150 FOR I=1 TO D2
160 INPUT#1,AF(I)
170 NEXT I
180 INPUT#1,TL,TK

```

```
190 NEXT I
200 FOR I=1 TO D2
210 DR$(I)=STRING$(AF(I),32)
220 NEXT I

300 'READ THE BLOCKS, CVUT INTO INDIVIDUAL FIELDS
305 'ELEMENTS
310 'THIS ROUTINE IS REPEATED UNTIL END-OF-FILE (EOF)
320 'BLOCK IS ENCOUNTERED
330 FOR I=1 TO TL
340 LINEINPUT#1,GT$(I)
350 NEXT I
400 IF LEFT$(GT$(I),5) <> "#####" THEN RETURN
410 'END-OF-FILE REACHED - SET A FLAG
420 RETURN
```

CHAPTER 22

Transferring
Maxi Manager II data
to VisiCalc

Maxi Manager II's ability to produce a VisiCalc-readable file greatly enhances its usefulness in any business environment. Operation of this transfer program is very similiar to the data extraction program described in the Chapter 21. Rather than repeat information already presented, we will simply ask you to read that chapter carefully.

One major difference between the two operations is that the VisiCalc transfer must use disk as the transfer medium. Cassette is not offered because Visicalc is a disk program only. The other major difference is that you are asked if you wish to have the output data stored in ROW or COLUMN format. The entire data base may be output, or you may use the selected range and Multiple Filter Search functions.

The data is stored in a file called MAXI2VC#/VC. The "#" in the file name represents a sequentially assigned number starting with one, which for each file created during a specific pass through the Maxi Manager II data base, will increment by one, as necessary.

To use this function, select Function Code #6 (Transfer Data into VisiCalc File) from the Extension Programs Function Menu, and follow the prompts on the video display.

LIMITATIONS

The upper limit for the file is either 254 rows by 50 columns for row-oriented data or 50 rows by 63 columns for column-oriented data. The program will also limit the file to a maximum of 17500 bytes, which corresponds to the available

memory of Radio Shack's most recent version of Visicalc. This value may be increased if you desire (older versions of VisiCalc could load about 22000 bytes) by changing the value listed in line 79 of the BASIC program MAXI2VC.

THE SAME DOS

It is best to have both Maxi Manager II and the VisiCalc program on the same DOS since many DOS'S cannot directly read files created with another DOS. This means that if your copy of VisiCalc is still on TRSDOS, it won't be able to read the file created by Maxi Manager II. Ideally BOTH Maxi Manager II AND VisiCalc should be put on TDOS, DOSPLUS, LDOS, or whatever. Unfortunately, Tandy has seen fit to "protect" VisiCalc, making it difficult to transfer to another DOS. There are a variety of ways around this problem, but because Tandy used slightly different methods on different versions of VisiCalc, they don't always work all time. Chapter 23 explains the method that works most often, and is certainly worth a try.

If this is too complicated for you, you might wish to consider using Powersoft's excellent program, "Super-Utility +" to move the VisiCalc-readable file from one DOS to another. In fact, Super-Utility + is excellent for moving VisiCalc itself from one DOS to another!

If you are a beginner with TRS-80 computing, and all this DOS talk confuses you, don't feel alone—it confuses everybody from time to time! Give our technical department a call at (305)-862-6917 and they'll help you get things sorted out.

CHAPTER 23

Transferring
Maxi Manager II data
to Newscrip

A special interface has been included to allow owners of Prosoft's excellent word-processor, "Newscript," to print out Maxi Manager II data with their familiar word processor instead of the PFF. Newscript owners may use the extended printing features available in this fine word processor for letters, etc.

This function is similar to the data extraction program discussed in Chapter 21, except that the file which is created is called MAXI2NS/DAT rather than EXTRACT/DAT. This file can then be read by Newscript's .RD command option. Refer to your Newscript instruction manual for discussion on the use of this command.

To run the transfer, select Function Code #7 (Transfer Data into Newscript File). Follow the instructions which will appear on the video display.

Data is inserted into Newscript using the following format:

@1 - the first extracted field. Not necessarily the first field in the data base, but rather the first field specified when extracting the data from Maxi Manager II.

@2 - the second extracted field

@3 - the third extracted field, etc.

As with the VisiCalc transfer program, it is best if Newscript and Maxi Manager II reside on the same DOS.

CHAPTER 24

The MaxiLabel
Utility

If most of your printing is done on labels, either single or multi-column, this chapter deserves your close attention. The MaxiLabel Utility allows you to print labels quickly and easily, WITHOUT having to create a Document File! Up to four labels across may be printed, and a user-specifiable format ensures that any label that will fit in your printer will be printed correctly. Several copies of each label may also be printed.

Mr. Bill Benson Bill's Batteries 456 Somewhere Avenue Overyonder, MA 00123 Advertisement Message ????	Mr. Bill Benson Bill's Batteries 456 Somewhere Avenue Overyonder, MA 00123 Advertisement Message ????	Mr. Bill Benson Bill's Batteries 456 Somewhere Avenue Overyonder, MA 00123 Advertisement Message ????	Mr. John Doe Radio Shack 123 Main Street Anytown, GA 33006 Advertisement Message ????
Mr. John Doe Radio Shack 123 Main Street Anytown, GA 33006 Advertisement Message ????	Mr. Bob Smith Radio Shack 123 Main Street Anytown, GA 33006 Advertisement Message ????	Mr. Bob Smith Radio Shack 123 Main Street Anytown, GA 33006 Advertisement Message ????	
SAMPLE Data Base Listing Total Labels Printed= 7 06/01/84			

FIGURE 24-1

As with Maxi Manager II's other printing modes, the entire data base may be printed, or records may be selected using the Multiple Filter or Speed searches.

To use the MaxiLabel Utility, select Function Code #8 (Print Multi-Column Mailing Labels) from the Extension Programs Function Menu. The following will appear on your video display:

MAXI MANAGER MAXILABEL UTILITY

Code	Function
1	- Print (All Records)
2	- Print (Selected Range)
3	- Print (Multiple Filter Search)
4	- Multiple Label Format and Test
5	- Return to Utility Program Menu
6	- Close Files and End

ENTER Function Code desired: .

MULTI-UP LABEL MENU FIGURE 24-2

- * Function Code #4 is used to configure Maxi Manager II's print format to handle the type of labels you will be using, and to specify which fields will be printed on each line.
- * The format need only be set once—for subsequent sessions the last format specified will be used unless you change it.
- * Function Codes #1, #2, #3, #5 and #6 perform in the same manner as their counterparts in other sections of this program.

LABEL FORMAT VERIFICATION

Let's take a brief look at setting up the print format. After selecting Function Code #4 (Multiple Label Format and Test), the following will appear on your video display:

```

Multiple Label Format and Test Routine
-----
1. Number of Labels per line (1-4): 2
2. Number of spaces from the left margin to label # 1: 0
3. Number of spaces from the left margin to label # 2: 33
4. Number of spaces from the left margin to label # 3: 66
5. Number of spaces from the left margin to label # 4: 99
6. Number of blank lines between labels: 2
7. Number of copies of each label: 1

```

Is this format correct (Y/N) ? .

FIGURE 24-3 LABEL VERIFICATION MENU

As you can see, every possible variation in label size is

accounted for here. Note that values for all four positions appear, even if you specify only one label per line. Ignore the extra values. The ones we have chosen for you to try initially are fairly typical, but you may need to change one or more to meet your specific needs.

If everything looks OK, just type Y <ENTER> to continue. To change a value, type N <ENTER> and you will be asked to specify the line number you wish to change. When you are finished, the following will appear:

Multiple Label Format and Test Routine

```
Label Line # 1 : Mr. F#13
Label Line # 2 : F#12
Label Line # 3 : F#14
Label Line # 4 : F#15, F#16 F#17
Label Line # 5 : Advertisement Message ????
```

Is this format correct (Y/N) ? .

FIGURE 24-4 WHAT FIELDS TO PRINT WHERE

If you have already read through the rest of this manual, you will instantly appreciate the simplicity of this approach. "F#12" tells Maxi Manager II to print the information from field number 12. You can quickly and easily substitute field numbers from your own data base.

Please note that the lines can have a completely different format if necessary—line #5, for example, does not necessarily need to have an advertising message. You could leave it blank, or put field numbers on it. The format is extremely flexible. The only limitation is that you may not put more than four fields on a single line.

Do keep in mind the format of your labels. If they will hold a maximum of 30 characters per line, you must show some discretion when setting the data base or all the information you would like to fit simply won't. But all this is background. Blinking on the screen is the question:

Is this format correct (Y/N)?

If you type Y <ENTER>, you will be asked:

Do you wish to run a label print test?

If you type Y <ENTER>, a series of asterisks will be printed on your labels, exactly where data will go during an actual printing session. This ensures that the labels are correctly aligned in the printer. You will be given an opportunity to go back, change one or more format lines, and run the test again. When you are finished, you will be returned to the Maxilabel Utility Menu.

When you enter one of the three printing modes, you are given the opportunity to edit the label format if necessary.

When printing is complete, a final label is printed which tells you the name of the list, the total number of labels printed, and the current date.

CHAPTER 25

Using the Document File Editor

The Document File Editor is a simple but effective tool which facilitates line by line editing of ASCII files. As such, it is ideal for editing or even creating Maxi Manager II Document Files. The Document File Editor can be accessed from two points within Maxi Manager II—the Utility Programs Menu or the Print File Function.

After loading the Document File Editor, you will be asked if you wish to (C)reate or (E)dit a file. Enter the appropriate choice.

If you selected Create, you will be asked to specify a file name for the file you are about to create. Don't add a drive number specification to the file name—the program will ask you specify the drive you wish to use. And that's all you have to do! You should now be in the text entry mode.

ENTERING TEXT

Using the Document File Editor couldn't be easier. You simply enter lines of text, pressing <ENTER> after each line. To see a list of PFF commands, type:

PFF <ENTER>

as the only characters on a text line, and a complete list will appear on the video display. Press <ENTER> to return to the text entry mode.

When you are finished entering text, type: lll <ENTER> as the only characters on a line, and you will enter the edit mode.

EDITING TEXT

In the edit mode each line of text is displayed individually. Displayed at the top of the screen are both the line number currently being worked on and the total number of lines in the file. At the bottom of the screen is the following:

Command (E/D/N/B/I/P/Q/O)?

Where:

E = edit the current line.

D = delete the current line.

N = display next line.

B = display previous line.

I = insert a line AFTER the current line, and BEFORE the next line.

P = print the Document File.

Q = quit editing and save the file.

O = list PFF commands.

The editor automatically moves to the next line in the file when you finish with the current one. You may also jump to any other line in the file by typing its number and pressing <ENTER>.

After ending a session using the Document File Editor you will be asked if you wish to:

Save the File?

If you type Y <ENTER>, you will be asked for a filename to write the new document file to. (It may be the same filename as the original, if desired.) Next, you will be asked if you wish to:

Return to the Utilities Menu?

If you type Y <ENTER>, you will be returned to the Utilities Menu. Type N <ENTER>, and you will be returned to the Print File Function.

WORKING ON DOCUMENT FILES

Almost all the information in Chapters 15 and 16 regarding the creation of Document Files with word processors applies here as

well. Exactly the same techniques are used, and the Document File Editor's PFF Command Help File is a real timesaver for beginners. The Document File Editor's only disadvantage stems from the fact that it is a line editor—you must work on just one line at a time. However, unless you frequently prepare lengthy and complex non-form letters, this shouldn't prove to be a hindrance.

APPENDIX A

How to Backup and Format Disks

The BACKUP and FORMAT procedures in TIDOS are very similiar to those found in TRSDOS. If you are familiar with TRSDOS, you'll have no difficulty understanding them. If you need a refresher course, use the following instructions.

You should note that BACKUP is stored on the Model I (B) disk only. It appears on both Model III and Model IV disks.

You will need to bypass the automatic program execution commands to gain access to these DOS utilities. To bypass the automatic execution commands and make a backup:

- 1) Turn on your TRS-80 in the usual manner. Always make sure that there are no diskettes in the drives when you turn the power switch on or off.
- 2) Put a write-protect tab over the write-protect notch (the small rectangular notch on one side of disk) on the disk to be copied, and insert it in Drive 0.
- 3) Simultaneously press <ENTER> and the reset button (the orange button at the upper right-hand side of the keyboard area on the MODEL III/IV, and the round button at the rear left on the back of the keyboard on the MODEL I).
- 4) Release the reset button and keep <ENTER> pressed until you see:

DOS PLUS

on the video screen. This means that you have bypassed the automatic program execution commands and have gained access to TIDOS.

- 5) Place a blank disk in Drive 1.
- 6) Type BACKUP <ENTER>.
- 7) Type the answers to the following questions as they are asked:

SOURCE DRIVE NUMBER?

Type 0 <ENTER>.

DESTINATION DRIVE NUMBER?

Type 1 <ENTER>.

BACKUP DATE (MM/DD/YY)?

Type today's date in the MM/DD/YY format <ENTER>. For example, July 21, 1983 would be typed as 07/21/83. If you attempt to backup onto a disk which has already been used, the computer will display the following message:

DISKETTE CONTAINS DATA, USE OR NOT?

If you want to use it, type Y <ENTER>. You can choose to format the disk at this point by typing F <ENTER>. If you don't wish to use the disk, type N <ENTER>. Take the disk out of the drive and start over using another disk. Make sure you always start over from the beginning—never change disks and type Y <ENTER>.

- 9) When the backup is complete

INSERT SYSTEM DISK

will appear on the video screen. Remove the original Maxi Manager disk from Drive 0, and store it in a safe place.

BACKING UP A DATA DISK

To make a backup of a data disk, follow the procedures outlined

above. However, before entering the Source drive number, remove the program disk and insert the data disk you wish to backup. Then continue as outlined above. To convert a 35-track TDOS diskette to 40 tracks, first format a disk for 40 tracks, and then backup the 35-track disk to the newly formatted 40-track disk. The result will be a 40-track TDOS disk.

When you label a disk, it is best to write the label BEFORE applying the label. Never write directly on a disk—the pressure of the pen can destroy it.

FORMATTING DATA DISKS

Before a disk can be used for data storage, it must be formatted. You may wish to format several disks at one time, so they will be available when you need them.

You should note that FORMAT is stored on the Model I (C) disk only. It appears on both Model III/IV disks.

Follow instructions 1-4 listed above under "Making Backups" which describe how to bypass the automatic program execution commands. Then:

- 5) Place the blank disk in Drive 1.
- 6) Type FORMAT <ENTER> and answer the following questions:

WHICH DRIVE IS TO BE USED?

Type 1 <ENTER>.

DISKETTE NAME?

Type any eight letter name and press <ENTER>.

FORMAT DATE?

Type today's date in the "MM/DD/YY" format and press <ENTER>.

MASTER PASSWORD?

Type a 0-8 character word and press <ENTER>. Don't forget the characters you use!

NUMBER OF CYLINDERS (35-96)?

Type the number of cylinders (tracks) your disk drives are configured to support and press <ENTER>.

SINGLE OR DOUBLE DENSITY? (MOD III ONLY)

Type S <ENTER> to format in single density, and D <ENTER> to format in double density.

If you attempt to format a disk which has already been used, the computer will display the following message:

DISKETTE CONTAINS DATA, USE OR NOT?

If you wish to use it, type Y <ENTER>. If not, type N <ENTER>, take the disk out of the drive and start over using another disk. Never type Y and use a different disk!

IF THE BACKUP DOESN'T WORK

If you have difficulty making a working backup of your Maxi Manager II disk, try using different source and destination drives. In other words, use Drive 1 where you used Drive 0 previously, and Drive 0 where you used Drive 1 previously. To do this, follow steps 1-6 above. In step 7, when asked for source drive, specify Drive 1. When asked for destination drive, specify Drive 0. Place the Maxi Manager disk in Drive 1, and the blank disk in Drive 0. Then proceed normally.

If this doesn't work, try slowing down the track-to-track stepping rate, using the CONFIG command as described in Appendix B.

APPENDIX B

Using TDOS

To take full advantage of Maxi Manager II's capabilities, you should understand which Library Commands are available on TDOS, and how they are used. Keep in mind that TDOS only contains what is necessary for normal operation of Maxi Manager II. If you plan to customize the program, you will probably benefit from the many useful utilities supplied with DOSPLUS 3.4 (but not included on the limited system supplied with Maxi Manager II).

A brief explanation of the TDOS Library Commands follows. For more complete information, consult the DOSPLUS 3.4 User's Manual.

AUTO

AUTO is the TDOS automatic program execution command, and it behaves in the same manner as the TRSDOS AUTO command. To automatically load and execute a file, Enter AUTO FILESPEC. ("FILESPEC" represents the name of the file you wish to load.) The correct command for Maxi Manager II is AUTO LOADER.

CONFIG

TDOS allows you to set the track-to-track stepping rate for each of your drives to 6, 12, 20, 30, or 40 milliseconds. Maxi Manager is delivered with the step rate set to 30 for all drives, to ensure compatibility with almost any TRS-80, no matter what brand of drives are installed in your system.

Many drives will operate at a faster rate, yielding faster disk access. Tandon drives (and all drives supplied by Radio Shack for the Model III/IV computer), can generally be operated at 6 ms. Check with your dealer to find out what the fastest

permissible rate is for your drives. If they can operate faster than 30 ms, we recommend resetting all Maxi Manager II program disks.

To change the step rate to, say, 6 ms, insert a backup copy of the program disk into Drive 0, bypass the automatic program execution commands, and type:

CONFIG :0 (STEP=6)

Repeat the command for drives 1, 2, and 3 (CONFIG :1...etc.). Then save the changed parameters by typing:

CONFIG (SAVE)

Make sure that there isn't a write-protect tab on the disk. If you forget to save the new parameters, they will be lost the next time you turn on the system.

If you select a stepping rate that is too fast for your drives, the disk will not operate correctly. You may or may not be able to reset it to the next higher stepping rate, which explains why you should only work on a backup disk!

CONVERT (MODEL III/IV ONLY)

Convert performs two functions:

A. Transfer the entire contents, or just a file from a Mod III TRSDOS disk to a TDOS disk. This process requires two drives.

B. Convert a Model I single-density disk created by any of several DOS's to make it readable by Model III TDOS.

Option A copies the contents from one disk to another, while Option B converts the actual disk to Model III format. To convert an entire disk using Option A, type:

CONVERT :1 :0 <ENTER>

If you wish to convert a single file, rather than the entire

disk, type:

CONVERT FILENAME/EXT:1 :0 <ENTER>

("FILENAME" and "/EXT" represent the name and extension of the specific file you wish to convert.

To convert an entire disk using Option B, type:

CONVERT :d <ENTER>

(":d" represents the number of the drive which holds the disk to be converted.) The disk drive will spin for a few seconds. When the DOS PLUS prompt reappears on the video display, the process is complete. After conversion, the disk will still be readable by most Model I DOS's, with the notable exception of TRSDOS 2.3. If you write to the disk again with a Model I, it must be reconverted before it will work properly with a Model III.

COPY

Copy moves a single file from one disk to another and functions in the same manner as the TRSDOS COPY command.

DIR

DIR is the TDOS directory command, and it displays only filenames. To read a directory, type:

DIR :d (Where "d" is the number of the
drive to be accessed)

To read a TRSDOS directory, type:

DIR :d (T)

(":d" represents the drive #, and (T) tells TDOS that it will be looking at a TRSDOS disk.) If you need more information than this abbreviated directory supplies (such as a listing of invisible or system files), you can read the directory with a DOSPLUS 3.3 or 3.4 disk.

KILL

Kill deletes files from a TDOS system or data disk and behaves in the same manner as the TRSDOS KILL command.

RENAME

Rename permits you to assign a different name to a disk file. The correct syntax is RENAME FILESPEC/EXT.PASSWORD TO FILESPEC/EXT.PASSWORD. "FILESPEC" represents the name of a file, "/EXT" represents the extension (if any) and "PASSWORD" represents the password assigned to the file (if any).

VERIFY

VERIFY causes TDOS to attempt to read data immediately after writing data to a disk. Enter VERIFY (ON) or VERIFY (OFF), depending on which mode you desire.

APPENDIX C

Technical Assistance

While every effort has been made to test this software package for errors and incompatibilities, it is conceivable that we overlooked a potential bug. Please let us know if you find any! Both phone and mail technical support from The Business Division is free of charge, except, of course, for the phone call and postage!

Fortunately for all concerned, our experience has shown that most alleged software errors have occurred because the user did not fully understand a procedure. Prior to contacting The Business Division for assistance, reread the User's Manual carefully to verify that your problem is indeed caused by a software error.

Our experience has also shown that legitimate software bugs appear even after a program has run flawlessly for a long period of time. Therefore it is our policy to improve programs and manual on a continuing basis. When you have signed and returned the registration card you will be entitled to free technical assistance. Absolutely no technical assistance can be provided to those who have not returned the registration agreement.

HOW TO GET HELP

For best service, send a detailed written explanation of the circumstances that led to the problem and how the problem can be duplicated. Be sure to include:

- * The serial number of your package
(found on the tear-off bottom half of
the registration card and on the title
screen when MM II first loads).
- * Any disks associated with the problem.

- * Description of any unusual or custom hardware you use.
- * Description of any patches or solutions you have tried.
- * Description of what was happening when the error occurred.
- * The name of the program (if known) that was in memory when the error occurred.
- * Any error codes encountered. Maxi Manager II has its own error-code system. If an error occurs during operation, the following message will appear on the video display:

Error Code -XXX-YY

The first three digits (XXX) of the error code represent the BASIC line number in which the error occurred. The last two digits (YY) represent the Level II/III or Disk BASIC error code (ERR). Once an error has occurred it is, alas, almost always fatal. Exit Maxi Manager II immediately, through Master Menu Function Code 9 (Close Files and End) if possible.

Our address is:

The Business Division
P.O. Box 3435
Longwood, FL 32750
ATTN: Technical Assistance

When sending disks, please include \$2.00 for postage, shipping material, and handling.

PHONE HELP

We take phone calls on weekdays during normal business hours. The number is (305) 862-6917. Have your serial and version number of the program handy, and reread the user's manual carefully before calling.

PROBLEMS WE CAN'T HELP YOU WITH

While we do all we can to make sure that you are happy with Maxi Manager II, we cannot serve as consultants or custom programmers. This means, for example, that we are unlikely to

provide assistance to people who have never read the manual, who are attempting to use Maxi Manager with DARKHORSE DOS 9.7, or (heaven forbid) can't seem to make it work on their homebrew Z-80 computer with modified paper-tape operating system.

The bottom line? If you can't make Maxi Manager II do what the User's Manual claims it will do, get in touch with us immediately. We'll do everything we can to help you. For anything else, see a computer consultant.

APPENDIX D

Screen Prints

Maxi Manager II has a built-in "screen print" utility, which transfers the contents of the video display to your printer. To perform a screen print:

Type a period (decimal point) as the first and only character, and press <ENTER>. This can be done at any point in the program where the flashing cursor is present. Assuming your printer is ready, the program will print out the contents of the video display. All graphics characters will be replaced with pound signs (#).

If your printer is not ready, the program will "hang." Turn on the printer and let the screen print take place to remedy this situation.

If you wish to use a printer connected to a serial port rather than the standard parallel port, refer to Chapter 19 for details on how to do this.

Finally, you may use a DOS screen print function in addition to or instead of this one. The built-in screen-print driver for TDOS is activated by pressing SHIFT + (down arrow) + * simultaneously.

Lobo Max 80 Users Note: Do not use Maxi Manager II's built-in "screen print" function. We're not sure why, but the program will "lock up" if used. Instead, use the LDOS screen-print function as outlined in your LDOS manual.

APPENDIX E

Document File Commands

The following commands are used in the creation of Document Files:

•
All Document File commands (except the column specification commands) must begin with a period.

()
Optional parameter. The items contained within the parentheses are optional. Default values are used if the item is not included with the associated Document File command.

< >
Mandatory parameter. The items contained within the brackets MUST be included as a part of the command.

/
A slash between two parameter items means that you may choose between the two items.

n
An integer value equal to or greater than zero.

(*MS FIELD NUMBER VARIABLE*)
A variable whose value is obtained from a Maxi Manager II data file and whose format is (*Field Number*).

(*?KEYBOARD VARIABLE*)
A variable whose value is obtained from the keyboard. The computer will display a user defined prompt on the screen during printing. The format is (*?Video Display Prompt*).

COLUMN SPECIFICATION COMMANDS

\$<R/L>,<width>,<left>,<right>,<separator>,<variable>

where:

\$

Must be the first character on the line.

<R/L>

Specifies right or left justification of the variable within the column. This must be typed in upper case characters only.

<width>

A number (greater than or equal to three) indicating the column width.

<left>

A number defining the left margin WITHIN the column.

<right>

A number defining the right margin WITHIN the column.

<separator>

Indicates the character (if any) to be used to separate the columns. This character is always positioned in the right-most character position of the column. DO NOT use periods or commas as column separators.

<variable>

Any valid MMS FIELD NUMBER VARIABLE or KEYBOARD VARIABLE

PAGE DEFINITION COMMANDS

.LL<n> Line Length (Default value - .LL80)

Sets the number of characters per line. For example, .LL50 tells the computer to print 50 characters per line.

.IY<n> Indentation Yes

Sets an indentation value n such that the text spaces n character positions from both the right and left margins. The command .IY5 instructs the computer to start printing text five

characters to the right of the left margin and end printing five characters from the right margin. The indentation used should not be greater than 1/4 of the line length. If the indentation is too large, the program will crash.

.IN Indentation No (Default)

Sets the indentation value to zero (equivalent to IY0). **.IN** should always be used at the end of the document if the **.IY<n>** command was used elsewhere in the document.

.LS<n> Line Spacing (Default **.LS1**)

Sets the spacing between lines. For example, the command **.LS2** specifies double spaced text.

.FF Form Feed

Forces the start of a new page. When encountered in the Document File, it forces the computer to stop printing on the current page. After spacing to the top of the next page, printing is resumed.

.RY Right justification Yes

Directs the computer to print text so that the right margins are even. Program will insert blanks between words, if needed, to do this.

.RN Right justification No (Default)

Turns off the right justification. Right margins will be in a ragged format.

.PL<n> Page Length (Default **.PL66**)

Sets the number of lines per page. For example, the command **.PL20** tells the computer to print 20 lines to a page. The Page Length must be greater than the sum of the top margin and the bottom margin.

.LM<n> Left Margin (Default **.LM0**)

Sets the left margin. Text will start printing n character positions from the left side of the page.

.TM<n> Top Margin (Default **.TM0**)

Sets the number of empty lines the computer should print at the

beginning of each page. Text will start on line n+1.

`.BM<n>` Bottom Margin (Default `.BMO`)

Sets the bottom margin. Directs the computer to stop printing n lines before the end of the page. Printing resumes on the next page.

PAGE NUMBERING COMMANDS

`.PY(n)` Page numbering Yes

Instructs the computer to print page numbers beginning with the start of the next page. The first page number printed will be page number n. Since this command does not require n to be typed when it is used, the default value of n has been set equal to one (1). As an example, `.PY4` will make the computer start numbering pages with the first page number being page number four (4).

`.PN` Page numbering No (Default)

Tells the computer to stop numbering pages.

`.PM<n>` Page label Margin (Default `.PML`)

Sets the position on the line where the page label should start printing.

`.PH` Page Header (Default)

Tells the computer to print the page numbering label at the top of the page.

`.PF` Page Footer

Instructs the computer to print the page numbering label at the bottom of the page.

`.PD<string#string>` Page label Description (Default `.PD Page #`)

Defines the format of the page number to be printed. The `<#>` sign indicates where within the label, the page number is to be printed. Label descriptions begin with the first character position following the `.PD` command. The maximum length of a page label description is 40.

Examples:

.PD This is a format whose page no. is #
.PD Customer Report- page # -Jan 20, 1990
.PD -#

PRINTER CONTROL COMMANDS

.SP Stop at end of Page

Causes the computer to stop printing at the end of every page. This feature allows you to insert stationary or envelopes for each new page when you are not using continuous feed paper. To restart printing after stopping at the end of a page, type "C".

.CM Comment line

Directs the computer to disregard all text appearing between the .CM command and the next ENTER key encountered. Example:

.CM This is a comment line that will end with the next ENTER key you type.

.RS RS-232-C port select

Instructs the computer to send the formatted text to the printer through the RS-232-C port.

.CP Cassette Port select

Instructs the computer to send the formatted text to the printer through the cassette port. The TRS-232 device sold by Small System Hardware utilizes the cassette port.

.NU<n> NULL characters (Default .NU0)

Some printers require the transmission of null characters after each line of text so that they will have time to position their carriage at the beginning of the next line. Consult your printer manual to find out if your printer needs null characters; if it does, determine the minimum number required and use that number all the time.

.BR<n> Baud Rate select (Default .BR3)

Defines the baud rate to use for serial printers. Valid values of n are listed in the following table:

n	baud rate	n	baud rate
1	110	5	1200
2	150	6	2400
3	300	7	4800
4	600	8	9600

.PC<n> Printer Control

Sends the control code n to the printer. For instance, Epson printers will print in a compressed 16.5-character-per-inch type font when the control character 15 is assigned. Control character 18 changes the type font back to the normal 10-character-per-inch mode. Consult your printer's manual to determine how to use this feature with your printer.

Report Generator Commands

The following commands are used exclusively with the report generator function of the PFF.

.RG Report Generator

Begins the Report Generator function. If headings are to be used in the Report, two options are available:

1. Heading on FIRST page of Report ONLY. Heading description MUST PRECEED the .RG command.
2. Heading on EVERY page of Report. Heading description MUST FOLLOW the .RG command. The .RE command MUST FOLLOW the heading description.

.RE Report Entry

Signifies the beginning of a group of rows within a Report that are common to a single data record. The rows are comprised of both MMS FIELD NUMBER VARIABLES and KEYBOARD VARIABLES.

.EE End of Entry

Signifies the end of a Report Entry. This command **MUST** be the last command in any Report Document File.

.RD Row Description

Informs the PRINT FILE Function that all column descriptions that follow comprise a single row. A new row begins when the Aext **.RD** command is encountered.

APPENDIX F

Creating Minimum System Disks

Minimum System disks are disks that contain the bare essentials of the target Disk Operating System (DOS). In order to function properly, Maxi Manager II must have a disk containing a (minimum system) DOS in drive 0 at all times. The minimum system disk may be swapped at any time with another containing the same minimum system safely. This allows the user to utilize drive 0 for data storage if necessary.

When configuring Maxi Manager II for use with a DOS different than the one it was supplied with, sufficient copies of the minimum system disk will be required to hold the various Maxi Manager II programs. As distributed, the D.0 version of Maxi Manager II requires three Model I minimum system TDOS disks and two Model III/4 minimum system TDOS disks. The following files must be resident on a Maxi Manager II System (or Minimum System) disk:

DOSPLUS 3.3S, 3.3D, 3.3

SYS0/SYS	SYS1/SYS	SYS2/SYS
SYS3/SYS	SYS4/SYS	SYS5/SYS
SYS7/SYS	SYS8/SYS	SYS9/SYS
SYS10/SYS	SYS11/SYS	SYS12/SYS
SYS13/SYS		
BOOT/SYS	DIR/SYS	TBASIC/CMD (1)

DOSPLUS 3.4S, 3.4D, 3.4

SYS0/SYS	SYS1/SYS	SYS2/SYS
SYS3/SYS	SYS4/SYS	SYS5/SYS
SYS7/SYS	SYS8/SYS	SYS9/SYS
SYS10/SYS	SYS11/SYS	SYS12/SYS
SYS13/SYS	SYS14/SYS	SYS15/SYS
BOOT/SYS	DIR/SYS	TBASIC/CMD (1)

DOSPLUS 3.5

SYS0/SYS	SYS1/SYS	SYS2/SYS
SYS3/SYS	SYS4/SYS	SYS5/SYS
SYS7/SYS	SYS8/SYS	SYS9/SYS
SYS10/SYS	SYS11/SYS	SYS12/SYS
SYS13/SYS	SYS14/SYS	SYS15/SYS
SYS16/SYS		
BOOT/SYS	DIR/SYS	TBASIC/CMD (1)

LDOS 5.1.3

SYS0/SYS	SYS1/SYS	SYS2/SYS
SYS3/SYS	SYS4/SYS	SYS5/SYS
SYS6/SYS	SYS7/SYS	SYS8/SYS
SYS9/SYS	SYS10/SYS	SYS11/SYS
SYS12/SYS	BOOT/SYS	DIR/SYS
LBASIC/CMD (1)	LBASIC/OV3 (1)	CONFIG/SYS (1)

TRDOS 2.3

SYS0/SYS	SYS1/SYS	SYS2/SYS
SYS3/SYS	SYS4/SYS	SYS6/SYS
BOOT/SYS	DIR/SYS	BASIC/CMD (1)

NEWDOS 2.1

SYS0/SYS	SYS1/SYS	SYS2/SYS
SYS3/SYS	SYS4/SYS	SYS6/SYS
BOOT/SYS	DIR/SYS	BASIC/CMD (1)
COPY/CMD (1)		

NEWDOS/80 Version 1

SYS0/SYS	SYS1/SYS	SYS2/SYS
SYS3/SYS	SYS4/SYS	SYS6/SYS (1)
SYS10/SYS	BOOT/SYS	DIR/SYS
BASIC/CMD (1)		

NEWDOS/80 Version 2

SYS0/SYS	SYS1/SYS	SYS2/SYS
SYS3/SYS	SYS4/SYS	SYS6/SYS (1)
SYS7/SYS	SYS10/SYS	SYS14/SYS
SYS15/SYS	SYS16/SYS	SYS17/SYS
SYS18/SYS	SYS19/SYS	SYS20/SYS
BOOT/SYS	DIR/SYS	BASIC/CMD (1)

DBLDOS

SYS0/SYS	SYS1/SYS	SYS2/SYS
SYS3/SYS	SYS4/SYS	SYS6/SYS
SYS7/SYS	DIR/SYS	BASIC/CMD (1)
COPY/CMD (1)		

TDOS 3.4

The MAKEDISK/BLD utility program provided with Maxi Manager II will automatically create a TDOS minimum system disk for you. MAKEDISK/BLD may be found on the "A" disks for both Model I and III/4 versions of Maxi Manager II.

To use MAKEDISK, make a backup copy of the "A" program disk, following the instructions in Appendix A. Then bypass the automatic program execution commands and gain access to the DOS. Type:

DO MAKEDISK <ENTER>

All unneeded files will be removed from the disk, leaving a minimum system disk.

Note 1:

Drive 0 data disks do not require these files. All disks that contain Maxi Manager II programs must contain these files.

APPENDIX G

Using Other DOS's And Customizing

As a result of the size of the Maxi Manager II system, more than one disk will probably be required to hold all of the programs you need for general use. Maxi Manager II is designed with this fact in mind. Whenever the resident program requires a different program module, Maxi Manager II first checks to see if the program is located on any of the available disks. If not, a screen prompt will appear requesting the desired module. There are a few exceptions to this rule. The following modules (grouped together) MUST reside on the same disk:

QSORT/CMD
SORT/MMS

PRINIM/CMD
PRINT/MMS

EDITOR/CMD
EDITOR

LOADER/CMD
DATAPLUS/CMD
MMS

In addition, all disks containing ANY of the above groupings must also contain the appropriate version of BASIC for the DOS in use. In the case of TDOS or DOSPLUS, the BASIC module required is TBASIC/CMD. LDOS users must include LBASIC/CMD and LBASIC/OV3.

Suggested pairings of the other program modules are listed in Part 4 of the Technical Manual.

Before copying Maxi Manager II to another DOS, you must perform the following steps:

1. Make a BACKUP copy of the required Maxi Manager II distribution disks (the ones received with this package).

2. For Model I systems, insert Disk "C" into drive 0.
For Model III/4 systems, insert Disk "A" into drive 0.

3. Go to DOS command level (see Appendix A, steps 1-4).

4. Type:

TBASIC DOSPATCH/BAS

5. Follow the instructions displayed on the screen as appropriate for the DOS you are transferring to. This program makes the necessary patches to the TDOS version of several CMD files needed to function with the desired DOS.

6. After the patching is complete, begin transferring Maxi Manager II to the target DOS.

NOTE:

If using LDOS, the following command must be entered from DOS command level:

AUTO LOADER

Maxi Manager II must then be started via this disk using the Auto Start feature of LDOS. Failure to use this method will cause the <BREAK> key to remain active. If the <BREAK> key is pushed, Maxi Manager II will freeze, requiring a reboot.

DELETE THE SAMPLE DATA BASE

Once you are finished experimenting with the sample data base you may wish to delete it from your working copies of the program disk, to make room for programs you use more often.

TECHNICAL MANUAL

CHAPTER 1

Using the Kernel Program

The enclosed program, KERNEL2, is a BASIC program designed to allow users of Maxi Manager II to selectively retrieve data from MMS-II files. The retrieved data can be passed to user-written routines (code) to be processed as desired. This permits users to write significant new application programs without having to worry about Maxi Manager II file management.

The KERNEL2 program provides all required error trapping, disk mounting management, and data file management routines. In addition, selected range and Multiple Filter search definition requests are also handled by the KERNEL2 program.

Multiple Filter Search data should be retrieved at line number 33.

Selected Range (including the All option) data should be retrieved at line number 58.

The KERNEL2 program title line banner is located at line number 65.

Menu item prompts are located at line numbers 55-56. The first three menu items should also be for the functions defined in the KERNEL2 program (i.e. ALL, SELECTED RANGE, and MULTIFILTER SEARCH). The last two menu items should also be for the functions defined (i.e. RETURN TO UTILITY MENU and RETURN TO BASIC). All other menu items should be sandwiched between these predefined functions. The variable <N> as defined in the latter of the two lines that make up the menu prompts should be set equal to the total number of menu prompts.

Menu item branch points are located at line number 19.

NOTE FOR MODEL I USERS

Because disk space is at a premium, the Kernel2 program is only included on the Model III (B) disk. The program DOES run on a Model I, however. If you have a double density Model I you shouldn't have any difficulty getting the program from the Model III disk. If you are limited to a single density system contact our technical department. They will be happy to provide you with a copy of KERNEL2 on a single density disk for a nominal fee.

TECHNICAL MANUAL

CHAPTER 2

File Structures

In this section we will discuss the Maxi Manager II file structures. While at first they may appear to be complex, they are actually straightforward and easy to comprehend—once you understand the concepts involved.

An MMS-II data base is comprised of four main files:

1. filename/MAS.password
2. filename/REC.password
3. filename/KF1.password
4. filename/EQU.password

where "filename" is the name you assigned to the data base and "password" is the password you assigned to the file.

Files with the /KF extension are the Key Files and always reside on drive # PD where PD is the drive number of the first data disk. The number that follows the word /KF represents the Key File number that the /KF file represents. For example:

Key File Number 1 is filename/KF1.password
Key File Number 2 is filename/KF2.password
Key File Number 5 is filename/KF5.password

The /MAS file contains the initialization parameters (i.e. field labels, date field flags, maximum number of available records, etc.) as well as the data disk number, data file serial number, etc. The /MAS file appears on all data disks but only the /MAS file on drive # PD is updated as records are added or deleted.

The /EQU file resides on drive # PD and contains the translated equation field algorithms used by Maxi Manager II.

Last but not least is the /REC file. This is the file that contains the actual data entries of an MMS-II data base. It appears on each data disk and accounts for the largest portion of the data disks. Now that you have a general understanding of what the files do, we will discuss each one in detail.

/MAS FILES

The /MAS file variables used in Maxi Manager II are defined as follows:

A\$(n)

A string variable containing the record format screen. Elements 1-10 contain the first page and elements 11-20 contain the second page.

A(n)

An integer value equal to the maximum number of records stored on drive # n.

AF(n)

An integer variable equal to the absolute value of the field length.

CF(n)

An integer variable flag equal to one if the field is an Equation field and equal to zero otherwise.

D2

An integer variable equal to the total number of fields.

DA(n)

An integer variable equal to the screen location (PRINT @ DA(n)) that marks the starting position of the data field for field number n.

DD

The integer variable equal to the disk drive number the disk is to be mounted in. Used to validate proper mounting of disks and drives.

DF(n)

An integer Date field flag equal to zero if not a Date field, equal to one if a Date field, and equal to two if an Extended Date field.

DP(n)

An integer value equal to the number of desired decimal places for field n.

DP\$(n)

A string array containing the numeric image of the desired decimal places for field n (i.e. the PRINT USING string).

DR\$(n)

A string variable equal in length to the field length of the field it represents.

F(0)

An integer value equal to the sum of the field lengths.

F(n)

An integer value equal to the field length. Negative values signify Numeric, Date, Rounded Numeric, or Equation fields.

F(D2+1)

An integer value equal to the length of the largest field.

F\$(n)

A string variable equal to the field label.

FA(n)

An integer variable equal to the screen location (PRINT @ FA(n)) that marks the starting position of the field label for field number n.

FD

An integer variable equal to the disk drive number (0-3) containing the first data disk.

FL(n)

An integer variable equal to the length of field label n.

IV

A double-precision variable equal to the highest record number ever added to the file. In new files, the value equals zero. Used by the RECOVER2 Utility.

IW

An integer variable equal to the number of spare LINKED records. This value is decremented until equal to zero. Each time a record is deleted, this variable is incremented by one (1).

KF(0)

An integer value equal to the number of the active Key File.

KF(n)

An integer value equal to the field number assigned to Key File n.

KF(6)

An integer value equal to the first field number to be used in Abbreviated Video displays.

KF(7)

An integer flag equal to zero if the current Key File is to be read in ascending order and equal to one if the Key File is to be from from in descending order.

KF(8)

An integer variable containing the field number of the "auto date" field if one exists. Otherwise, this variable equals zero.

KF(9)

An integer variable equal to one (1) if the "ADD" audit trail is active and equal to zero otherwise.

KF(10)

An integer variable equal to one (1) if the "EDIT" audit trail is active and equal to zero otherwise.

ND

An integer value equal to the total number of disks in the data base less one.

NE(1)

An integer value equal to $NE(2)*NE(3)$. This variable is used by the MMSBASIC file accessing routines.

NE(2)

An integer value equal to the number of subrecord blocks used by the MMSBASIC filing routines.

NE(3)

An integer value equal to the length of a subrecord block.

NE(4)

An integer variable equal to the number of the first field appearing on page one of the data record.

NE(5)

An integer variable equal to the number of the last field appearing on page one of the data record.

NE(6)

An integer variable equal to the number of the first field appearing on page two of the data record.

NE(7)

An integer variable equal to the number of the last field appearing on page two of the data record.

NF\$(n)

A string value equal in length to $NE(3)$. The highest value of n equals $NE(2)$.

NK

An integer value equal to the maximum number of Key Files.

PD

An integer variable equal to the disk-drive number holding the /EQU, /KF, and active /MAS files.

R

An integer value equal to the number of active records in the data base.

R(0)

An integer serial number unique to a data file.

R(1)

An integer serial number unique to a data file.

R(2)

An integer serial number unique to a data file.

SR

An integer value equal to the number of the next spare record location.

VI

An integer variable equal to the maximum number of records allocated to the data base.

Reading /MAS File Variables.

The following program listing provides the necessary routines to read the /MAS file variables:

```

10 CLEAR 3000: DEFINIT A-Z: F5=50
12 DIM AF(F5+2),CF(F5),DF(F5),DP(F5),DP$(F5),DR$(F5+2)
14 DIM F(F5+2),F$(F5),PR$(128),DA(F5),FA(F5),A$(20)
16 DIM MD(2),NE(7),NF$(4),KF$(8),KF(10),VR$(3),A(3)
18 DIM R$(2),R(2),TP(F5),FL(F5): HA=&HFC05-&HC92-1

30 'Get the name of the Maxi Manager II file.
31 INPUT "Filename ";FI$

40 'Get the password of the Maxi Manager II file.
41 INPUT "Password ";PW$

55 'Open the /MAS file and get the overhead variables
60 OPEN "R",1,FI$+"/MAS."+PW$+" ":"MID$(STR$(PD),2)

```



```

70 FIELD#1,2 AS ND$,2 AS DD$, 2 AS NK$,2 AS V1$,2 AS FD$,
   2 AS PD$,2 AS IW$,2 AS D2$,2 AS R$,2 AS SR$,
   2 AS VR$(0),2 AS VR$(1),2 AS VR$(2),2 AS VR$(3),
   8 AS IV$,2 AS R$(0),2 AS R$(1),2 AS R$(2)

```

```

80 FOR I=0 TO 8
85 FIELD#1,42+I*2 AS X1$,2 AS KF$(I)
90 NEXT I

```

```

95 GET#1,1

```

```

100 PD=CVI(PD$): FD=CVI(FD$): ND=CVI(ND$)
102 DD=CVI(DD$): NK=CVI(NK$): V1=CVI(V1$): D2=CVI(D2$)
104 SR=CVI(SR$): IW=CVI(IW$): IV=CVD(IV$): R=CVI(R$)

```

```

110 FOR I=0 TO 2
115 A(I)=CVI(VR$(I))
120 R(I)=CVI(R$(I))
125 NEXT I

```

```

130 A(3)=CVI(VR$(3))

```

```

140 FOR I=0 TO 8
150 KF(I)=CVI(KF$(I))
160 NEXT I

```

```

170 IF KF(0)=0 THEN KF(0)=1 'Must have a valid Key File number

```

```

180 'Now read the SCREEN Array
190 'First allocate the array in protected memory
200 MD(0)=VARPTR(A$(0)): MD(1)=HA-64: MD(2)=64
210 NAME ARRAY(MD(0))

```

```

220 'Now FIELD a temporary variable and read, passing
221 'the data to the protected array.
230 FOR I=1 TO 20
240 PR=INT((I-1)/4)+1
250 SR=I-4*(PR-1)
260 FIELD#1, (SR-1)*64 AS PR$(0), 64 AS PR$(1)
270 GET#1,PR+1
280 LSET A$(I)=PR$(1)

```

290 NEXT I

300 'Now FIELD a temporary array to be used to read

310 'the remainder of the /MAS file variables.

320 FOR I=1 TO 128

330 FIELD#1, (I-1)*2 AS PR\$(0), 2 AS PR\$(I)

340 NEXT I

350 'Now read /REC file blocking and

360 'screen parameter variables.

365 GET#1,7

370 FOR I=1 TO 7

380 NE(I)=CVI(PR\$(I+120))

390 NEXT I

400 F(F5+1)=0

410 FOR I=1 TO D2

420 F(I)=CVI(PR\$(I)) 'Field length

430 AF(I)=ABS(F(I)) 'Absolute value of field length

440 DF(I)=CVI(PR\$(60+I)) 'Date field flags

450 'Calculate the length of the longest field.

460 IF AF(I)>F(F5+1) THEN F(F5+1)=AF(I)

470 NEXT I

480 GET#1,8

490 FOR I=1 TO D2

500 CF(I)=CVI(PR\$(I)) 'Equation field flags

510 DP(I)=CVI(PR\$(50+I)) 'Number of decimal places

520 NEXT I

530 GET#1,9

540 FOR I=1 TO D2

550 DA(I)=CVI(PR\$(I)) 'PRINT @ position for data

560 FA(I)=CVI(PR\$(50+I)) 'Field label screen address

570 NEXT I

580 FOR I=1 TO NE(5)

590 FA(I)=HA+FA(I)-192 'Point to protected memory area

600 NEXT I

610 IF NE(5)=D2 THEN 660 'Check for page 2, if no then skip.

620 FOR I=NE(6) TO D2

630 FA(I)=HA+FA(I)+448 'Point to protected memory area

640 NEXT I

650 'Point F\$() array to protected memory address

660 NAME SA(F\$(1),FA(1),D2)

680 FOR I=1 TO NE(5)

690 TP(I)=HA+DA(I)-192 'Point to protected memory area

700 NEXT I

710 IF NE(5)=D2 THEN 760 'Check for page 2, if no then skip.

720 FOR I=NE(6) TO D2

730 TP(I)=HA+DA(I)+448 'Point to protected memory area

740 NEXT I

750 'Point DR\$() array to protected memory address

760 NAME SA(DR\$(1),TP(1),D2)

770 'Set length of elements of DR\$() array

780 NAME SL(DR\$(1),AF(1),D2)

790 FOR I=1 TO 25

'Get length of field labels

800 FL(I+25)=CVI(PR\$(I+100))

810 NEXT I

820 GET#1,8

830 FOR I=1 TO 25

840 FL(I)=CVI(PR\$(I+100))

850 NEXT I

860 'Set length of elements of F\$() array

870 NAME SL(F\$(1),FL(1),D2)

```

880 'Build the PRINT USING string for decimal places
890 FOR I=1 TO D2
900 IF (F(I)<1 OR DF(I)=0 OR DP(I)<>0) THEN
      DP$(I)=STRING$(AF(I)-DP(I)-1,35) + "." +
      STRING$(DP(I),35)
910 NEXT I

920 CLOSE#1

```

/KF FILES

The /KF_n files (where n is an integer value equal to a Key File number) are made up of a series of two byte compressed integer string variables. The files are equal in length to the highest active record number. Each variable contains an integer pointer or key to the actual storage location of the random record it represents.

For example, the data associated with record number seven is accessed by reading the seventh two byte string variable contained in the active /KF file and converting the string to an integer. Then, with the help of MMSBASIC, the data record associated with the integer variable is retrieved from the /REC file.

When a file is sorted, the pointers representing the data records are shuffled and written to the proper /KF file in ascending order. For example, suppose we want to sort the following:

: BEFORE SORT			: AFTER SORT		
Record		Pointer			Pointer
No.	Value	Contents	Value	Contents	
<hr/>					
1	27	B	12	A	
2	32	X	27	B	
3	12	A	17	C	
4	17	C	32	X	
5	18	Z	18	Z	

As you can see, before the sort is performed, the /KF file pointers are stored as follows:

27 32 12 17 18

After the sort, the /KF file pointers are stored as follows:

12 27 17 32 18

Notice how the record numbers associated with all data records except the last (whose pointer value did not change its position within the /KF file) have also changed. Prior to the sort, record number two was associated with pointer value thirty-two while after the sort record number two is associated with pointer value twenty-seven.

Thus you can see how several Key Files are possible within an MMS-II data base. Whenever the current Key File is changed, MMS-II merely changes the /KF file number it reads from to access the actual data.

Also, you can see how easy it is to read the file in descending order by merely accessing the pointers from last to first.

READING /KF FILES

The following subroutine provides the necessary routines to read the /KF files:

```

1000 'Integer variable n equals the desired Key File number
1010 IN$=FI$+"/"+KF"+MID$(STR$(n),2)+"."+PW$+": "+MID$(STR$(PD),2)
1020 RL=2: EC=0: T1=1
1030 RW=0: PR$=STRING$(2,32)
1032 PI=5 'MMSBASIC file number
1040 NAME MPEN(IN$,PI,RL,EC)

1050 AD=0 'Zero (0) read Key File in ascending order and
        'one (1) reads in descending order
1060 T=1 'T equals the record number desired
1070 T=ABS(T-AD*(R+1)) 'R=Highest active record number

```

1080 NAME DALE(PI,T,TI,RW,PR\$,EC)
 1090 PR=CVI(PR\$) 'PR equals the integer pointer value

/REC FILES

The organization of the /REC file is straightforward. The tricky part lies in understanding the "spare idle linked list" concepts discussed at the end of this section.

A record is made up of a series of individual fields added together end-on-end.

```
:-----:-----:-----:-----:-----:
: Field #1 : Field #2 : Field #3 : Field #4 : ... :
:-----:-----:-----:-----:-----:
```

Likewise, /REC files are made up of a series of individual records added together end-on-end.

```
:-----:-----:-----:-----:-----:
: Rec. #1 : Rec. #2 : Rec. #3 : Rec. #4 : ... :
:-----:-----:-----:-----:-----:
```

When more than one data disk has been allocated to an MMS-II file, the individual disks are viewed by the program as a single file:

```
:-----:-----:-----:-----:-----:
: Disk #0 : Disk #1 : Disk #2 : Disk #3 :
:-----:-----:-----:-----:-----:
:<-----MMS-II Data File----->:
:<-----Record 1 thru N----->:
```

Whenever a record contains more than 255 characters, Maxi Manager II must split the record into equal length blocks; blocks must also be less than or equal to 255 characters. For example, a record containing 604 characters is split into three blocks of 202 characters each. Because the blocks MUST be equal in length, the record will now be 606 characters in length (3*202 = 606).

The MMSBASIC routines provided with Maxi Manager II were designed to handle the housekeeping chores associated with accessing the record from the correct disk, determining the number and size of each block, and splitting the blocks into the proper fields. Two commands (FILE & CUT) perform the necessary record retrieval functions. The FILE function retrieves the record number requested and returns the record in from one to four blocks. The CUT command takes the record blocks and returns the record in from one to twenty fields.

To retrieve records from a Maxi Manager II data base, the following steps must be performed:

1. Read /MAS file variables
2. Open (MPEN) the /REC file(s)
3. Initialize the destination block and field variables

Then for each record desired:

4. Retrieve record block(s)
5. CUT block(s) into field elements

And finally, before exiting the program:

6. Close (SHUT) the /REC file(s)

Once the /MAS file variables have been read, the /REC file(s) must be opened.

```
2000 EC=0 'Error Code initialization
2005 'FD equals the disk drive number containing
    the first data disk (read from the /MAS file)
2010 'ND equals the number of data disks minus one
    (read from the /MAS file)
2020 'NE(3) equals the record block length
    (read from the /MAS file)
```

```
2030 FOR I=FD+1 TO ND+FD+1 'MMSBASIC file number
2040 FM$=FI$+"/"+REC."+PW$+": "+CHR$(47+I)
```

```
2050 NAME MPEN(FM$,I,NE(3),EC)
2060 NEXT I
```

Next the block and field destination variables must be initialized. Failure to initialize the destination string variables will result in a fatal error when calling the MMSBASIC commands, FILE and CUT.

```
3000 'AF(D2) equals an array containing the
      absolute value field lengths
3010 'D2 equals the number of fields
3020 'NE(2) equals the number of record blocks
3030 'NE(3) equals the record block length

3040 'Point NF$() array to protected memory address
3041 'NEVER assign values to this array by any means
3042 '      other than LSET, RSET, or MID$
3050 MD(0)=VARPTR(NF$(0))
3060 MD(1)=HIA+2080-NE(3): MD(2)=NE(3)
3070 NAME ARRAY(MD(0)) 'Initialize block(s)

3080 'Point DR$() array to protected memory address
3081 'NEVER assign values to this array by any means
3082 'other than LSET, RSET, or MID$
3090 NAME SA(DR$(1),TP(1),D2)
3100 NAME SL(DR$(1),AF(1),D2)
```

Repeated as often as necessary, the following code retrieves the data from the /REC file(s). The DR\$() array will contain the actual data record. (DR\$(1) corresponds to the contents of field number 1, DR\$(2) to the contents of field number 2, etc.)

```
4000 'A(0) equals the /MAS file variable
      containing end of disk info
4010 'PD equals the disk drive number where the
      /KF file(s), the /EQU file, and the updated
      /MAS file reside.
4020 EC=0 'Error Code initialization
4030 'NE(2) equals the number of record blocks to
      retrieve
4040 RW=0 'Indicates a record is to be read from
```


the data file - a one (1) indicates data
is to be written to the data file

```
4050 T=1 'Record number to be accessed
4060 NAME FILE(FD,ND,T,A(0),NE(2),NF$(1),RW,EC)
4070 NAME CUT(NE(2),D2,NF$(1),DR$(1))
```

NOTE: ALL VARIABLES USED IN THE MMSBASIC COMMANDS MUST BE DEFINED AS INTEGER VARIABLES UNLESS OTHERWISE DEFINED WITHIN THE PRECEDING PROGRAM INSTRUCTIONS. ALWAYS USE THE DEFINIT FUNCTION TO AVOID PROBLEMS.

CLOSING MMSBASIC FILES

Data written to Maxi Manager II files via the MMSBASIC commands is usually stored in a buffer which is emptied and written to disk when the buffer is either full or the MMSBASIC files are closed (SHUT).

The following routines will close all MMSBASIC files ensuring that all data stored in temporary memory buffers is actually written to disk:

```
5000 FOR I=1 TO 6
5010 NAME SHUT(I,EC)
5020 NEXT I
```

/EQU FILES

The /EQU file stored on the PD data disk contains the translated equation functions. If equation fields were not used in a data file, the /EQU file will be empty. The ASCII file, /EQU contains a series of program statements which are automatically merged into the "MMS" program at RUN time. The statement numbers range from 500 - 990 with the equation statement for field number one beginning with line 500. Statements are incremented by a factor of 10.

If you desire to change the equations for a field, you must LOAD the /EQU file as a BASIC program, make the necessary changes, and SAVE the changed file with the ASCII option. When viewing a translated equation, you will see that all F#nn statements

entered during initialization have been replaced by the statement:

$$DR\#(nn)$$

Be sure to use the same format when changing equation fields. For example, field #11 is defined as an Equation field on the sample data base provided with MMS-II. The formula ENTERed during initialization was:

$$F\#5 * (1 + F\#9/100)$$

The translated formula appearing in the sample data base /EQU file is:

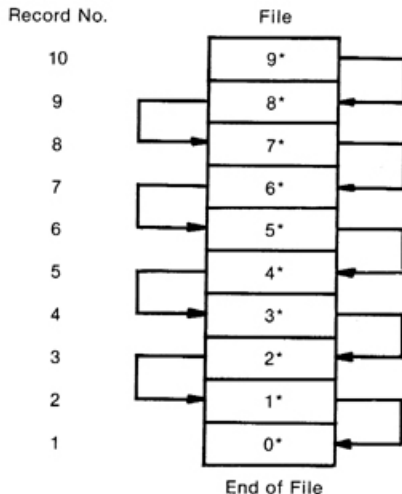
```
600 DR#(11)= DR#(5) * (1 + DR#(9)/100):
      LSET DR$(11)= STR$(DR#(11))
```

IDLE LINKED LISTS

The key to understanding the MMS-II file structures is the Idle Link List. Its strategy is quite simple:

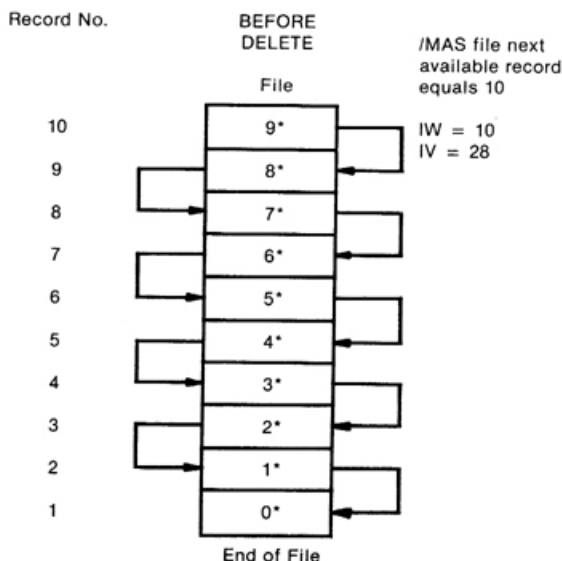
EACH SPARE RECORD POINTS TO THE NEXT SPARE RECORD

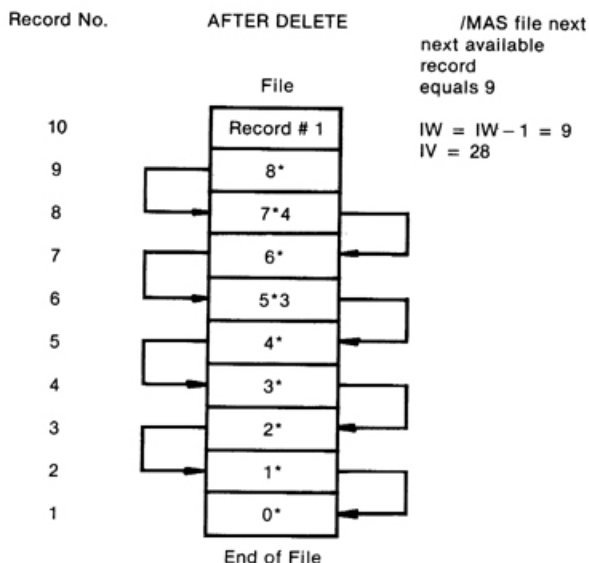
The last record of the file contains an "end of file" mark rather than the next spare record. In Maxi Manager II, a zero is used to signify the "end of file." An Idle Link List may be viewed as follows:



Note that all spare record pointers are followed by an asterisk. To ADD a new record to the file, the variable IW is checked to see if it is greater than zero (0). If it is equal to zero, the next record written in the data base is equal to the number of the record itself. That is to say that if IW=0 and the highest active record in the file is equal to 27, then next record to be written will record number 28. In this case, the variable IV should also be set equal to 28.

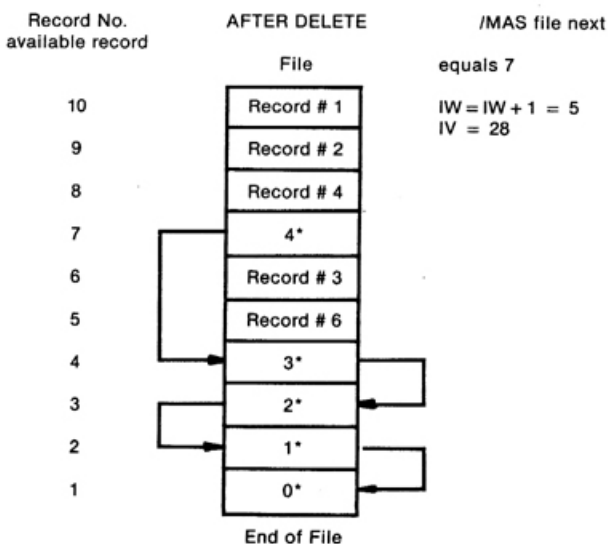
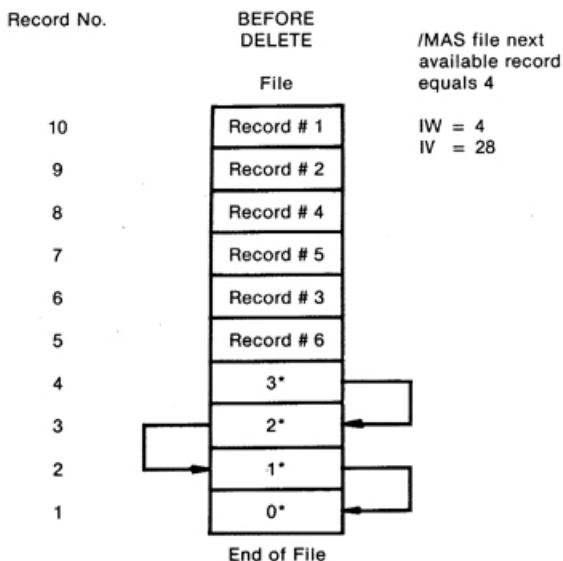
If IW is greater than zero, the value of IW is decremented by 1. Then the "next available spare record" pointer variable is retrieved from the /MAS file. The record number contained in this variable is then read in an effort to obtain the NEW "next available spare record". The /MAS file variable is updated and the record data is written into the file. The value of IV is left unchanged since we are not adding a new record number that has never been used before. For example:





One of the advantages of the Idle Link List file structure is the ease in which old records can be deleted; file compression is never required. To DELETE a record, the "next available spare record" pointer variable is retrieved from the /MAS file and is then written into the record to be deleted. Next, the record number that has been deleted is written into the "next available spare record" pointer variable in the /MAS file. Last, but not least, the variable IW is incremented by 1, indicating the addition of another spare LINK to the SPARE IDLE LINKED LIST.

For example, if we were to DELETE record number 7:



TECHNICAL MANUAL

CHAPTER 3

Loading and Executing MMSBASIC

MMSBASIC consists of two files stored on the Maxi Manager II Program Disk (Disk A). The two files are:

1. LOADER/CMD
2. DATAPLUS/CMD

To use MMSBASIC, you must delete (using the KILL command) all program files listed on page XX (Model I) or pages XX-XX (Model III) with the exception of the two files listed above.

To execute MMSBASIC, either press the reset button or type LOADER while at the DOS command level.

When MMSBASIC has loaded, it will attempt to run a BASIC program entitled "MMS" which will not be on the disk if you followed the instructions in the preceding paragraphs. This option was installed to allow you to execute your applications programs automatically. To take advantage of the feature, give the first BASIC program of your application the filename of "MMS". In all probability, this first program will be a menu program from which you will choose the proper BASIC program containing your special application.

ARRAY

Format: NAME ARRAY (MD%(0))

where MD%(0) is a three element integer array containing information pertaining to the string

variable to be initialized in protected memory.

MD%(0) equals the VARPTR of the string variable array to be created.

MD%(1) equals the protected memory address to store the first element of the target string array.

MD%(2) equals the uniform length of each element of the string array.

Purpose: To allocate protected memory for a string array where each element is of uniform length in order to eliminate Microsoft BASIC's annoying garbage collection delays.

Remarks: This command should only be used as indicated in the routines provided in Maxi Manager II Technical Manual Chapter 2 which discusses file structures. If used improperly, memory can be randomly destroyed.

The following conventions apply:

MD%(1) => &HEF73
0 < MD%(2) <= 255

Example 1: 10 MD%(0) = VARPTR(A\$(0))
20 MD%(1) = &HFOOO
30 MD%(2) = 64
40 NAME ARRAY(MD%(0))

BREAK

Format: NAME BREAK (X%)

where X% is a dummy integer variable.

Purpose: To disable the keyboard driver together with the BREAK key.

Remarks: If this command is used, the only way you can input something from the keyboard is through a call to the NKEY command. It can be used to speed up the execution of a BASIC program because it prevents the BASIC

interpreter from scanning the keyboard at a time when an input is not expected.

Example 1: 10 X% = 1: NAME BREAK (X%)

CUT

Format: NAME CUT (NB%, D2%, NF\$(1), DR\$(1))

where DR\$(1) is the first element of the destination array for an MMS-II record split into field components. NF\$(1) is a string variable array. Each element must be equal in length to the record blocks. NB% is an integer variable containing the number of record blocks. D2% is an integer variable equal to the number of fields contained in the data file. AF%(1) is the first element of an integer array containing the absolute value of the field lengths.

Purpose: To split the MMS-II record blocks into MMS-II record field components.

Remarks: The following conventions apply:

0 < LEN(NF\$(1)) <= 255

0 < LEN(DR\$(1)) <= 61

1 <= D2% <= 50

1 <= AF%(1) <= 61

0 < NB% <= 4

Example: 10 AF%(1) = 20: AF%(2) = 20: AF%(3) = 40
15 D2%=3 'Number of fields
20 FOR I=1 TO D2%
22 DR\$(I) = STRING\$(AF%(I),32)
24 NEXT I
30 NB% = 1
32 NF\$(I) = STRING\$(80,50)
50 NAME CUT(NB%,D2%,NF\$(1),DR\$(1))

DALE

Format: NAME DALE(A%, B%, C%, RW%, NF\$(1), EC%)

where A% is an integer variable equal to the file number - must match the file number used in the MPEN function for the desired file.

B% is an integer variable containing the beginning record number to read/write.

C% is an integer variable containing the number of consecutive records to read/write.

RW% is an integer variable equal to zero (0) if data is to be retrieved and a one (1) if data is to be stored.

NF\$(1) is a string variable array. Each element must be equal in length to the record length used in the MPEN function for file number A% (i.e. if record length in MPEN function is 225, then LEN(NF\$(1)), for array elements NF\$(1) thru NF\$(C%) must be equal to 225.

Array elements will contain either: 1. the contents of record number B% thru B%+C%-1 if variable RW%=0 or 2. the information to be written into records B% thru B%+C%-1.

EC% is an integer variable ERROR code.

Purpose: To read/write an array of data from/to a Maxi Manager II file. The DALE function is similar to Disk BASIC's GET#X,Y/PUT#X,Y function. It should be noted however that the DALE function is capable of performing read/write operations for an entire array at one whack.

Remarks: The following conventions apply:

LEN(NF\$(1)) <= 255

1 <= A% <= 6

0 < B% <= 32767

0 < C% <= 32767-B%

0 <= RW% <= 1

Example: 10 A% = 1
15 B% = 1 'First record to access
20 C% = 100 'Number of records to access

```

25 '***** RL% equals the file's record length
30 FOR I=1 TO C%
32 NF$(I) = STRING$(RL%,32)
33 NEXT I
35 RW% = 0 'Retrieve flag
40 EC% = 0
50 NAME DALE(A%,B%,C%,RW%,NF$(1),EC%)

```

NOTE: The ERROR Code EC% is greater than zero if an ERROR has occurred. ERROR trapping is left up to the programmer and is not linked to Disk BASIC's ON ERROR GOTO functions. The ERROR codes returned are TRSDOS ERROR codes rather than BASIC or Disk BASIC ERROR codes.

NULL

Format: NAME DNULL (X%)

where X% is an integer variable greater than or equal to 0 and less than or equal to 255.

Purpose: To set the number of null characters to be printed at the beginning of each new line.

Remarks: The DNULL command is only used by the Screen Print subsystem. All other Hardcopy Print functions of MMS-II use a different command for setting null characters.

Example: 10 X% = 20
20 NAME DNULL(X%)

DOS

Format: NAME DOS (X%)

where X% is an integer variable.

Purpose: To obtain a value stored in protected memory that indicates the Disk Operating System currently being used. This value is then used by the MMSBASIC programmer to determine the proper MMSBASIC EXECUTE command format to use for the operating system in use.

Remarks: The following values are currently defined within Maxi Manager II:

ASCII value of X%	Disk Operating System
68	TDOS, DOSPLUS
78	NEWDOS/80
76	LDOS 5.1.3+
84	TRSDOS, NEWDOS 2.1
84	DBLDOS

Example 1: 10 X% = 0
20 NAME DOS (X%)

ENABLE

Format: NAME ENABLE (X%)

where X% is a dummy integer variable.

Purpose: To enable the keyboard driver together with the BREAK key.

Remarks: Do not disable the BREAK key by the POKE(23886),0 instruction as Maxi Manager II will not function properly. The keyboard driver is disabled following a call the the BREAK command.

Example: 10 X% = 1
20 NAME ENABLE(X%)

EXECUTE

Format: NAME EXECUTE(EX\$)

where EX\$ is a string variable containing the DOS level command to be executed.

Purpose: To enable the user to execute DOS level commands (regardless of the Disk Operating System in use) in a uniform manner or to MERGE a BASIC overlay program into another BASIC program and then continue running the revised program.

Remarks: This command is listed in the MMSBASIC command section for informative purposes only.

FILE

Format: NAME FILE(FD%, ND%, RN%, A%(0), NB%, NF\$(1), RW%, EC%)

where A%(0) is an integer variable array whose elements equal the number of records stored on each disk.

Remember when using DOSPLUS 3.5 or DOSPLUS 4.0 with a hard-disk (Winchester drive) that drive 0 actually refers to drive #4, etc. All harddisk drive numbers are programatically offset by a factor of four (4) by Maxi Manager II.

FD% is an integer variable equal to the drive number of the first data disk.

ND% is an integer variable equal to the total number of disks in the data file minus one.

RN% is an integer variable equal to the MMS-II record number desired (i.e. translated /KF file record number).

NB% is an integer equal to the number of record blocks.

RW% is an integer variable equal to zero (0) if data is to be retrieved and a one (1) if data is to be stored.

NF\$(1) is a string array equal in length to the size of the record block (i.e. the record length in which the

data files were MPENed.

EC% is an integer variable ERROR code.

Purpose: To read/write a data record from a Maxi Manager II data file. Record blocking, sector spanning, and disk spanning is automatically taken care of as a function of the command.

Remarks: The following conventions apply:

LEN(NF\$(1)) <= 255

1 <= NB% <= 4

0 <= RN% <= 32767

0 <= RW% <= 1

0 <= FD% <= 3

0 <= ND% <= 3

Example:

```

10 A%(0) = 500
15 A%(1) = 600
17 FD% = 0
18 ND% = 1
20 RN% = 200 'Record number to access
25 '***** RL% equals the file's record length
26 '***** NB% equals the number of sub-blocks
28 FOR I=1 TO NB%
30 NF$(I) = STRING$(RL%,32)
33 NEXT I
35 RW% = 0 'Retrieve flag
40 EC% = 0
50 NAME FILE(FD%,ND%,RN%,A%(0),NB%,NF$(1),RW%,EC%)

```

NOTE: The ERROR Code EC% is greater than zero if an ERROR has occurred. ERROR trapping is left up to the programmer and is not linked to Disk BASIC's ON ERROR GOTO functions. The ERROR codes returned are TRSDOS ERROR codes rather than BASIC or Disk BASIC ERROR codes.

FOF

Format: NAME FOF (X%)

where X% is an integer variable equal to the file number opened using the MMSBASIC MPEN command.

Purpose: To establish the proper End of File (EOF) location within a DOS directory. This command is only used from within the Maxi Manager II Initialization function.

Remarks: Will have unpredictable effects on any disks currently mounted in any disk drive if not used after opening a file using the MPEN command for the first time. Should never be used after the file has been initially created.

Example 1: 10 X% = 1 'File number one
20 NAME FOF (X%)

GIVE

Format: NAME GIVE (B\$)

where B\$ is a string expression whose length is greater than zero (0) and less than or equal to sixty-one (61) characters.

Purpose: To retrieve up to sixty-one characters when chaining from one program to another.

Remarks: The contents of B\$ will be identical to the contents of B\$ prior to using the KEEP command. While use of Disk BASIC's left hand MID\$ function is recommended when building B\$ prior to using the KEEP command, the use of BASIC's right hand MID\$ function is recommended for retrieving the same variables. If numbers were converted into strings using Disk BASIC's MKI\$, MKS\$, and MKD\$ functions, use Disk BASIC's CVI, CVS, and CVD functions to convert the strings back to numbers.

Example: 10 B\$ = STRING\$(61,32)
20 NAME GIVE(B\$)

```

30 A% = CVI(MID$(B$,1,2))
40 B! = CVS(MID$(B$,3,4))
50 C# = CVD(MID$(B$,7,8))
60 D$ = MID$(B$,15,14)

```

NOTE: Refer to the KEEP command for the companion method of storing data retrieved with the GIVE command. If $LEN(B\$)<1$ or $LEN(B\$)>61$ results will be unpredictable and ERRORS will probably occur.

GLUE

Format: NAME GLUE(D2%, NB%, DR\$(1), NF\$(1))

where DR\$(1) is the first element of the source array of a MMS-II record. The GLUE command is used to pack the individual field components into the filing array NF\$(n).

NF\$(n) is a string variable array. Each element must be equal in length to the record blocks.

AF%(1) is the first element of an integer array containing the absolute value of the field lengths.

NB% is an integer variable containing the number of record blocks.

D2% is an integer variable equal to the number of fields contained in the data file.

Purpose: To pack the MMS-II record field components into MMS-II record blocks.

Remarks: The following conventions apply:

0 < LEN(NF\$(1)) <= 255

0 < LEN(DR\$(1)) <= 61

1 <= D2% <= 50

1 <= AF%(1) <= 61

0 < NB% <= 4

Example: 10 AF%(1) = 20; AF%(2) = 20; AF%(3) = 40
 15 D2% = 3 'Number of fields


```

20 FOR I=1 TO D2%
22 DR$(I) = STRING$(AF%(I),50+I)
24 NEXT I
30 NB% = 1
32 NF$(I) = STRING$(80,32)
50 NAME GLUE(D2%,NB%,DR$(1),NF$(1))

```

INNKEY

Format: NAME INNKEY (IN%)


where IN% is an integer variable equal to the ASCII value of the last character entered from the keyboard.

Purpose: To provide an input mechanism similar to BASIC's INKEY\$ function. The INNKEY function of MMSBASIC returns the ASCII value of the last key pressed (via the integer variable argument) rather than a single byte string as with BASIC's INKEY\$ function.

Remarks: INNKEY displays a non-destructive cursor on the video screen. Characters entered via the INNKEY function are not echoed to the video display. This responsibility is left to the user.

Example: 10 IN% = 0
 20 NAME INNKEY(IN%)
 30 IF IN% = 13 THEN END 'The ENTER key was pressed

NOTE: The ASCII codes returned in IN% include the following:

KEY	ASCII Decimal Code
BREAK	1
CLEAR	31
DOWN ARROW	10
UP ARROW	91
ENTER	13
SHIFT +  + B	2 (Required with LDOS)

KEEP

Format: NAME KEEP (B\$)

where B\$ is a string expression whose length is sixty-one (61) characters.

Purpose: To protect up to sixty-one characters when chaining programs.

Remarks: Variables can be stored in B\$ by replacing selected portions of the B\$ variable with the aid of Disk BASIC's left hand MID\$ function. When storing numeric values, first convert them into strings using Disk BASIC's MKI\$, MKS\$, and MKD\$ functions. Once stored, the variables can be retrieved by the next program using the MMSBASIC GIVE command.

Example: 10 B\$ = STRING\$(61,32)
20 MID\$(B\$,1,2) = MKI\$(A%)
30 MID\$(B\$,3,4) = MKS\$(B!)
40 MID\$(B\$,7,8) = MKD\$(C#)
50 MID\$(B\$,15,14) = "This is a test"
60 NAME KEEP(B\$)

NOTE: Refer to the GIVE command for the companion method of retrieving data saved with the KEEP command.
If LEN(B\$)<1 or LEN(B\$)>61, results will be unpredictable and ERRORS will probably occur.

LDIR

Format: NAME LDIR (MD%(0))

where MD%(0) is a three element integer array containing information pertaining to the memory block to be moved.

MD%(0) equals the starting address of the memory block to be moved.

MD%(1) equals the destination address of the memory block to be moved.

MD%(2) equals the number of bytes to be moved.

Purpose: To move a block of memory from one location to another at high speed. Used throughout Maxi Manager II for screen displays and program chaining functions.

Remarks: This command should only be used by an experienced programmer and is listed in the MMSBASIC command section for informative purposes only.

LOWER

Format: NAME LOWER (IN\$, X%)

where IN\$ is a string expression or string array.

X% is an integer variable equal to one (1) if IN\$ is a string variable and equal to the number of elements of an array to be converted to upper case if IN\$ is equal to an array. The conversion will start with the first element passed to MMSBASIC in the NAME LOWER command.

Purpose: To convert lower case string variables to upper case string variables.

Remarks: If variable IN\$ is an array, the value of X% must be less than or equal to the Dimension of IN\$(). If the Dimension of IN\$() equals ten (10), and the IN\$ argument given in the LOWER command is IN\$(4), then the value of X% must be greater than zero and less than or equal to 10-4 or six (6).

Example 1: 10 B\$ = "All good men must come to the aid of their
country"

20 X% = 1

```

30 NAME LOWER(B$,X%)
40 'The contents of B$ are now:
   ALL GOOD MEN MUST COME TO THE AID OF THEIR
   COUNTRY

```

Example 2:

```

10 DIM A$(15)
20 X% = 14
30 NAME LOWER(A$(2),X%)
40 'Array elements 2-15 will be converted to upper
   case

```

MPEN

Format: NAME MPEN (F\$, F%, RL%, EC%)

where F\$ is a string variable containing the name of the file to be opened (including drive number, password, and file extension).

F% is an integer variable equal to the file number to be assigned to the file.

RL% is an integer variable equal to the record length of the file.

EC% is an integer variable ERROR Code.

Purpose: Opens files and defines file buffer length. A file may be opened by both Disk BASIC and MMSBASIC simultaneously.

Remarks: The file name must be assigned to the string variable F\$.

The following conventions apply:

$0 < F\% \leq 6$

$0 < RL\% \leq 255$

Example:

```

10 F$ = "SAMPLE/MAS.MMS:3"
20 F% = 1
30 RL% = 33
40 EC% = 0
50 NAME MPEN(F$,F%,RL%,EC%)

```

NOTE: The ERROR Code EC% is greater than zero if an ERROR has occurred. ERROR trapping is left up to the programmer and is not linked to Disk BASIC's ON ERROR GOTO functions. The ERROR codes returned are TRSDOS ERROR codes rather than BASIC or Disk BASIC ERROR codes.

NKEY

Format: NAME NKEY (IN\$, IN%)

where IN% is an integer expression.

IN\$ is a string expression.

Purpose: To provide an input mechanism which displays and limits the length of the input field. An ideal way of preventing input errors.

Remarks: The integer variable IN% must be set equal to the length of the desired input string prior to calling NKEY. The following conventions apply:

IN% > 0 for alphanumeric values

IN% < 0 for numeric values

IN% = 0 will cause an unrecoverable ERROR

The string variable IN\$ must be set equal to a string whose length is equal to the absolute value of IN%. Upon detection of the <ENTER> key, control is return to BASIC with IN\$ equal to the input response. Upon detection of the <CLEAR> key, control is returned to BASIC with IN\$ equal to all characters in the input response TO THE LEFT of the character located at the cursor position when the <CLEAR> key was pressed. This feature is used to truncate unwanted characters. In either case, blank characters (again from right to left) are removed from IN\$ prior to returning control to BASIC. If the value of IN\$ is numeric, standard use of the VAL(IN\$) BASIC command can be used to obtain the numeric value for assignment to another variable. NKEY will display the contents of IN\$ will all contiguous spaces (right to left) appearing as graphic symbols to indicate the field length allowed. Left and right arrow keys control the position of the cursor within the input field. <SHIFT> + <LEFT ARROW> erases the current character and backspaces the cursor one space.

Example 1: 10 '*** Alphanumeric input
20 IN% = 12

```
30 IN$ = "Mary Mattson"
40 NAME NKEY(IN$,IN%)
```

Example 2: 10 '*** Numeric input
20 IN% = -5
30 IN\$ = STRING\$(ABS(IN%),32)
40 NAME NKEY(IN\$,IN%)

NOTE: Control is also returned to BASIC if the first character keyed is either the <UP ARROW>, <DOWN ARROW>, <CLEAR>, or <BREAK>. The ASCII codes returned in IN\$ are as follows:

KEY	ASCII Decimal Code
BREAK	1
CLEAR	31
DOWN ARROW	10
UP ARROW	91

In addition, the Screen Print function is activated if the first and only character keyed is a PERIOD followed by the <ENTER> key. Following the Screen Print, control is returned back to the NKEY function with the PERIOD removed.

PARALLEL

Format: NAME PARALLEL (X%)

where X% is a dummy integer variable.

Purpose: To enable the Centronics parallel print driver routines used for Screen Prints.

Remarks: The Centronics parallel print driver is standard for the TRS-80 computer and is selected automatically as the default print device driver.

Example 1: 10 X% = 1

20 NAME PARALLEL (X%)

PGIVE

Format: NAME PGIVE (XU\$)

where XU\$ is a string variable (or an array of string variables) equal to the desired format as would be used by the BASIC "PRINT USING" command.

Purpose: To allow the use of the BASIC "PRINT USING" statement to control the format of a string variable.

Remarks: The PGIVE statement is used in conjunction with the MMSBASIC PUS command. The PUS statement must be executed prior to the PGIVE command. The PGIVE command restores keyboard and video display drivers that are disabled by the PUS command.

Example 1: 10 U\$ = "#,###.##": XU\$ = U\$
 20 NAME PUS(U\$)
 30 PRINT USING U\$; 1234.5
 40 NAME PGIVE(XU\$)
 50 'XU\$ now equals "1,234.50"

Example 2: 10 U\$(1) = "###": U\$(2) = "#,###.##"
 20 XU\$(1) = U\$(1): XU\$(2) = U\$(2)
 30 NAME PUS(U\$(1))
 40 PRINT USING U\$(1); 76.4
 50 PRINT USING U\$(2); 1234.5
 60 NAME PGIVE(XU\$)
 70 'XU\$(1) now equals " 76"
 80 'XU\$(2) now equals "1,234.50"

PSCREEN

Format: NAME PSCREEN (X%)

where X% is a dummy integer variable.

Purpose: To perform a screen print from MMSBASIC.

Remarks: The output will be directed to the currently defined printer device (i.e. RS-232, TRS-232, Centronics parallel).

Example 1: 10 X% = 1
20 NAME PSCREEN (X%)

PUS

Format: NAME PUS (U\$)

where U\$ is a string variable (or an array of string variables) equal to the desired format as would be used by the BASIC "PRINT USING" command.

Purpose: To allow the use of the BASIC "PRINT USING" statement to control the format of a string variable.

Remarks: The PUS statement is used in conjunction with the MMSBASIC PGIVE command. The PGIVE statement must be executed in order to restore the keyboard and video display drivers.

Example 1: 10 U\$ = "#,###.##": XU\$ = U\$
20 NAME PUS(U\$)
30 PRINT USING U\$; 1234.5
40 NAME PGIVE(XU\$)
50 'XU\$ now equals "1,234.50"

Example 2: 10 U\$(1) = "###": U\$(2) = "#,###.##"
20 XU\$(1) = U\$(1): XU\$(2) = U\$(2)
30 NAME PUS(U\$(1))
40 PRINT USING U\$(1); 76.4
50 PRINT USING U\$(2); 1234.5

```
60 NAME PGIVE(XU$)
70 'XU$(1) now equals " 76"
80 'XU$(2) now equals "1,234.50"
```

RS232

Format: NAME RS232 (X%)

where X% is a dummy variable.

Purpose: To enable the RS-232-C print driver routines used for Screen Prints.

Remarks: The RS232 command is only used by the Screen Print subsystem. All other Hardcopy Print functions of MMS-II use a different command for setting the RS-232-C driver. Baud rates, stop bits, word length, etc. for Model I systems are all set in accordance with the internal switches of the RS-232-C board; they are not software selectable when using the RS232 command as described here. The Model III baud rate has been preset to 300 baud and cannot be modified by anyone other than EXADOR, INC.

Example: 10 X% = 1
20 NAME RS232(X%)

SA

Format: NAME SA (F\$(1), F%(1), D2%)

where F\$ is a string (may also be an array) that is to be created in protected memory.

F% equals the protected memory address of the string F\$ (may also be an array of addresses).

D2% is an integer equal to the number of strings (or array elements) to be initialized in protected memory.

Purpose: To allocate protected memory for a string (or string array) in order to eliminate MICROSOFT BASIC's annoying garbage collection delays.

Remarks: This command should only be used as indicated in the routines provided in Maxi Manager II Technical Manual Chapter 2 which discusses file structures. If used improperly, memory can be randomly destroyed.

The following conventions apply:

F% => &HEF73

0 < LEN(F\$) <= 255

Example 1: 10 F\$ = STRING\$(10,32)

20 F% = &HFOOO

30 D2% = 1

40 NAME SA(F\$, F%, D2)

Example 2: 10 F\$(1) = "Ashilto": F\$(2) = "Vernacio"

20 F%(1) = &HFOOO: F%(2) = &HFOO7

30 D2% = 2

40 NAME SA(F\$(1), F%(1), D2)

SEARCH

Format: NAME SEARCH

(DR\$(1),PO%(1,1),PI\$(1,1),D2%,P1%,F1%,F2%,SK\$,MR%)

where DR\$() is a string variable containing the data fields to be searched.

PO%(X,Y) is a 10x3 element integer array where the X character position corresponds to the search key "number". The Y element is used to indicate three other vital pieces of information. The first Y position is used to pass the field number to be searched. The second Y position is used to indicate the type of search (see table below). The third Y position must always be a 1.

PI\$(X,Y) is a 10x2 element string array where the X

character position corresponds to the search key "number". The first Y element is used to pass the lower range of the search "key". The second Y element is used to pass the upper range of the search "key". If only one "key" is used, the second "key" must equal the same value as the first "key".

D2% is an integer variable equal to the total number of fields in the DR\$() array.

PI% is an integer variable equal to the total number of search "keys".

FI% is an integer variable equal to the constant 10.

F2% is an integer variable equal to the constant 10.

SK\$ is an encoded string variable used to define the interfield logical relationships used in the SEARCH function.

MR% is an integer variable used to pass the results of the search where 0 indicates that the search was not successful and 1 indicates that the search was successful.

Purpose: To provide a high speed method to perform a multi-level search function. The MMSBASIC SEARCH function operates at up to 50 times faster than an equivalent BASIC routine.

Remarks: The "@" symbol is defined as a "wildcard" character when present in the PI\$(X,Y) array. The SEARCH command will accept any character in the "@" field position. The following conventions apply:

$0 < D2\% \leq 50$

$FI\% = F2\% = 10$

$0 < PI\% \leq 10$

The integer variable PO%(X,2), where the X character position corresponds to the search key "number", is used to indicate the type of search to be performed by the SEARCH function. The following table defines the values that may be assigned to the PO%(X,2) variable:

PO%(X,2)	Type of MultiKey Search
1	Instring
2	◇ Instring
3	= (Alphanumeric)
4	◇ (Alphanumeric)
5	=> <= (Alphanumeric)
6	Instring (All fields)
7	=> <= (Numeric)
8	=> <= (Date)
9	◇ (Numeric)
10	=> <= (Extended Date)
11	= (Alphanumeric WILDCARD)
12	◇ (Alphanumeric WILDCARD)

The string variable SK\$ is used to pass the MultiField Logic definition to the SEARCH function. The string must be encoded with CHR\$() values before the SEARCH command can process the search. The following table defines the values that may be assigned to the SK\$ variable:

CHR\$()	Definition
0	End of MultiKey Logic Function
1-10	Search Key Number
51	Left Parentheses (
52	Right Parentheses)
53	AND logic token
54	OR logic token
55	XOR logic token

Example 1: 10 '*** Single Field Search Logic Encoding
20 SK\$ = CHR\$(0)

Example 2: 10 '*** MultiField Logic Encoding
20 '*** MultiField Logic defined as:

10(3A4)02

30 SK\$ = CHR\$(1) + CHR\$(54) + CHR\$(51) + CHR\$(3) +
CHR\$(4) + CHR\$(52) + CHR\$(54) + CHR\$(2) +
CHR\$(0)

Example 3: 10 '*** Complete Search

20 DZ% = 43 '(Number of Fields)

30 F1% = 1 '(Constant)

40 F2% = 1 '(Constant)

50 MR% = 0 '(Record Match Found equals 1)

60 P1% = 3 '(Search Keys)

70 PO%(1,1) = 2 '(Search Key #1 on Field 2)

80 PO%(1,2) = 3 '(Alphanumeric = Search)

90 PO%(1,3) = 1 '(Constant)

100 P1\$(1,1) = "Maxi Manager II" '(Lower Range Search
Key)

110 P1\$(1,2) = P1\$(1,1) '(Upper Range Search Key)

120 PO%(2,1) = 7 '(Search Key #2 on Field 7)

130 PO%(2,2) = 8 '(Date => <= Search)

140 PO%(2,3) = 1 '(Constant)

150 P1\$(2,1) = "06/21/50" '(Lower Range Search Key)

160 P1\$(2,2) = "10/04/53" '(Upper Range Search Key)

170 PO%(3,1) = 1 '(Search Key #3 on Field 1)

180 PO%(3,2) = 9 '(Numeric <> Search)

190 PO%(3,3) = 1 '(Constant)

200 P1\$(3,1) = " 149.95" '(Lower Range Search
Key)

210 P1\$(3,2) = P1\$(1,1) '(Upper Range Search Key)

220 'MultiKey Logic Definition = 1A203

230 SK\$ = CHR\$(1) + CHR\$(53) + CHR\$(2) + CHR\$(54) +
CHR\$(3) + CHR\$(0)

240 NAME SEARCH

(DR\$(1),PO%(1,1),P1\$(1,1),D2%,P1%,F1%,F2%,SK\$,MR%)

250 IF MR% = 1 THEN PRINT "Record Found" ELSE
PRINT "Record Not Found"

SHUT

Format: NAME SHUT (F%, EC%)

where F% is an integer variable equal to the file number to be closed. EC% is an integer variable ERROR Code.

Purpose: Closes files opened with MMSBASIC's MPEN command.

Remarks: The following conventions apply:

0 < F% <= 6

Example: 10 F% = 1
20 EC% = 0
30 NAME SHUT(F%,EC%)

NOTE: The ERROR Code EC% is greater than zero if an ERROR has occurred. ERROR trapping is left up to the programmer and not linked to Disk BASIC's ON ERROR GOTO functions. The ERROR codes returned are TRSDOS ERROR codes rather than BASIC or Disk BASIC ERROR codes.

SL

Format: NAME SL (F\$(1), AF%(1), D2%)

where F\$ is a string (may also be an array) that has been created in protected memory using the NAME SA() command.

AF% equals the protected memory length of the string F\$

(may also be an array of lengths).

D2% is an integer equal to the number of strings (or array elements) to be initialized in protected memory.

Purpose: To restore (or initialize) the protected memory length of a string (or string array) in order to eliminate MICROSOFT BASIC's annoying garbage collection delays.

Remarks: This command should only be used as indicated in the routines provided in Maxi Manager II Technical Manual Chapter 2 which discusses file structures. If used improperly, memory can be randomly destroyed. This command is always used in conjunction with the NAME SA() command and is used throughout Maxi Manager II to restore the original length of string arrays whose lengths have been altered during various stages of program execution. The following convention apply:

0 < AF% <= 255

Example 1: 10 F\$ = STRING\$(10,32)
20 AF% = 10
30 D2% = 1
40 NAME SL(F\$, AF%, D2)

Example 2: 10 F\$(1) = "Ashilto": F\$(2) = "Vernacio"
20 AF%(1) = 7: AF%(2) = 8
30 D2% = 2
40 NAME SL(F\$(1), F\$(2), D2)

STRIP

Format: NAME STRIP (X\$, Y\$, Z%)

where X\$ is a string variable containing the source data to be stripped of leading or trailing blank characters.

Y\$ is a destination string variable which will contain the stripped X\$ upon returning from the STRIP command.

Z% is an integer variable whose value indicates whether

TECHNICAL MANUAL

CHAPTER 4

Program Descriptions

The Maxi Manager II System for the Model I consists of three disks labeled "A", "B", and "C". The "A" disk contains the most often used programs. The "B" disk contains the BACKUP program, the sorting programs, and most of the utility programs mentioned throughout the manual. The "C" disk contains the FORMAT program, the sample data base, and the remaining utility programs.

MODEL I DISK (A):

Program Name	Format	Function
LOADER/CMD	Object	Contains the initial loader display as well as a link to DATAPLUS/CMD
DATAPLUS/CMD	Object	The heart of MMSBASIC. Always resident in memory except when SORTING or in the PRINT FILE Function
PRINIM/CMD	Object	The machine language portion of the PRINT FILE Function.
MMS	BASIC	The main program.
INITIAL/MMS	BASIC	The initialization and utility programs module.
PRINT/MMS	BASIC	The BASIC portion of the PRINT FILE Function.
MAKEDISK/BLD	ASCII	Creates a TDOS minimum system disk.
TBASIC/CMD	Object	The TDOS 3.4 BASIC language interpreter.

MODEL I DISK (B):

Program Name	Format	Function
QSORT/CMD	Object	The machine language portion of the SORT module.
SORT/MMS	BASIC	The BASIC portion of the SORT/MERGE program.
TBASIC/CMD	Object	The TDOS 3.4 BASIC language interpreter.
BACKUP/CMD	Object	The TDOS 3.4 disk backup utility.
DOCUFILE	BASIC	The DOCUFILE extension program used to build Document Files.
EXTRACT2	BASIC	The extension program used to extract data from Maxi Manager II files.
MERGE2	BASIC	The extension program used to merge data into Maxi Manager II files.
RECOVER2	BASIC	The extension program used to recover damaged Maxi Manager II data files.
SCRIPFIX/BAS	BASIC	A BASIC program used to patch Model I SCRIPSIT for use with TDOS 3.4.
MAXILABL	BASIC	The extension program used to print one, two, three, or four across mailing labels.

MODEL I DISK (C):

Program Name	Format	Function
SAMPLE/MAS.MMS	Data	The MASTER file of sample data base.
SAMPLE/KF1.MMS	Data	Key File #1 for the sample data base.
SAMPLE/KF2.MMS	Data	Key File #2 for the sample data base.
SAMPLE/REC.MMS	Data	The data storage file for the sample data base.
SAMPLE/EQU.MMS	ASCII	The file containing the equation field formulae of the sample data base.
REPORT/DF	ASCII	A Report Document File for the sample data base.
LABEL/DF	ASCII	A Label Document File for the sample data base.
DOSPATCH/BAS	BASIC	The patching program for the TRSDOS, LDOS, DOSPLUS, NEWDOS, NEWDOS/80, and DBLDOS operating systems.
DOSPATCH/DAT	Data	The data file used by the DOSPATCH/BAS program.
CONVERT2	BASIC	The extension program used to upgrade data files created with Exador, Inc.'s Maxi Manager program to Maxi Manager II compatible format.
TBASIC/CMD	Object	The TDOS 3.4 BASIC language interpreter.
FORMAT/CMD	Object	The TDOS 3.4 disk format utility.

EDITOR/CMD	Object	A duplicate copy of DATAPLUS/CMD required to automatically chain the Document File Editor program.
EDITOR	BASIC	The Document File Editor program.
MAXI2VC	BASIC	The extension program used to transfer Maxi Manager II data to a VISICALC readable data file named MAXI2VC/VC.
MAXI2NS	BASIC	The extension program used to transfer Maxi Manager II data to a NewScript word processor readable data file named MAXI2NS/DAT.

The Maxi Manager II System for the Model III/4 consists of two disks labeled "A" and "B". The "A" disk contains the most often used programs including BACKUP, FORMAT, the sample data base and most of the utility programs. The "B" disk also contains the BACKUP and FORMAT programs as well as the KERNEL2 program and the remaining utility programs.

MODEL III/4 DISK (A):

Program Name	Format	Function
LOADER/CMD	Object	Contains the initial loader display as well as a link to DATAPLUS/CMD
DATAPLUS/CMD	Object	The heart of MMSBASIC. Always resident in memory except when SORTING or in the PRINT FILE Function
PRINIM/CMD	Object	The machine language portion of the PRINT FILE Function.
MMS	BASIC	The main program.
INITIAL/MMS	BASIC	The initialization and utility programs module.
PRINT/MMS	BASIC	The BASIC portion of the PRINT FILE Function.
MAKEDISK/BLD	ASCII	Creates a TDOS minimum system disk.
TBASIC/CMD	Object	The TDOS 3.4 BASIC language interpreter.
QSORT/CMD	Object	The machine language portion of the SORT module.
SORT/MMS	BASIC	The BASIC portion of the SORT/MERGE program.

BACKUP/CMD	Object	The TDOS 3.4 disk backup utility.
DOCUFILE	BASIC	The DOCUFILE extension program used to build Document Files.
EXTRACT2	BASIC	The extension program used to extract data from Maxi Manager II files.
MERGE2	BASIC	The extension program used to merge data into Maxi Manager II files.
RECOVER2	BASIC	The extension program used to recover damaged Maxi Manager II data files.
SCRIPFIX/BAS	BASIC	A BASIC program used to patch Model I or Model III SCRIPSIT for use with TDOS 3.4.
SAMPLE/MAS.MMS	Data	The MASTER file of sample data base.
SAMPLE/KF1.MMS	Data	Key File #1 for the sample data base.
SAMPLE/KF2.MMS	Data	Key File #2 for the sample data base.
SAMPLE/REC.MMS	Data	The data storage file for the sample data base.
SAMPLE/EQU.MMS	ASCII	The file containing the equation field formulae of the sample data base.
REPORT/DF	ASCII	A Report Document File for the sample data base.
LABEL/DF	ASCII	A Label Document File for the sample data base.
DOSPATCH/BAS	BASIC	The patching program for the TRSDOS, LDOS, DOSPLUS, NEWDOS, NEWDOS/80, and DBLDOS operating systems.

DOSPATCH/DAT	Data	The data file used by the DOSPATCH/BAS program.
CONVERT2	BASIC	The extension program used to upgrade data files created with Exador, Inc.'s Maxi Manager program to Maxi Manager II compatible format.
FORMAT/CMD	Object	The TDOS 3.4 disk format utility.
CONVERT/CMD	Object	A TDOS 3.4 utility program that transfers a file from a Model III TRSDOS disk to a TDOS disk and also converts a Model I single density into a TDOS 3.4 readable format (See Appendix B).

MODEL III/4 DISK (B):

Program Name	Format	Function
TBASIC/CMD	Object	The TDOS 3.4 BASIC language interpreter.
BACKUP/CMD	Object	The TDOS 3.4 disk backup utility.
MAXILABEL	BASIC	The extension program used to print one, two, three, or four across mailing labels.
FORMAT/CMD	Object	The TDOS 3.4 disk format utility.
EDITOR/CMD	Object	A duplicate copy of DATAPLUS/CMD required to automatically chain the Document File Editor program.
EDITOR	BASIC	The Document File Editor program.

MAXI2VC	BASIC	The extension program used to transfer Maxi Manager II data to a VISICALC readable data file named MAXI2VC/VC.
MAXI2NS	BASIC	The extension program used to transfer Maxi Manager II data to a NewScript word processor readable data file named MAXI2NS/DAT.
CONVERT/CMD	Object	A TDOS 3.4 utility program that transfers a file from a Model III TRSDOS disk to a TDOS disk and also converts a Model I single density into a TDOS 3.4 readable format (See Appendix B).
KERNEL2	BASIC	A BASIC program that contains all necessary logic needed to access selected Maxi Manager II data without having to worry about file management. Allows user to create significant new applications programs.

GLOSSARY

Active Records - The number of records that are currently allocated in the data base. Does not include deleted records.

Alphanumeric - any information that contains letters, numerals, symbols. Anything found on a standard QWERTY keyboard.

Ascending - Arranging from lowest to highest (in alphanumeric terms from A to Z).

Backup Copy - A duplicate copy of another disk. If the original is damaged or lost the backup copy can still be used.

Baud Rate - The rate at which data is transferred via the RS-232-C port of your TRS-80. Baud rate is often specified in bits per second. 300 BAUD is 300 bits per second.

Bit - A piece of a byte. There are 8 or 16 bits per byte.

Byte - Any one (1) character piece of information. There are 1024 bytes in 1K of memory.

Cylinder - A track on a disk. On single-sided drives, a cylinder is the same as a track. On a double-sided drive, each cylinder has two tracks—the track on the first side of the disk and the track on the second.

DOS - (D)isk (O)perating (S)ystem, A group of programs that tell the disk drives what to do. These programs are usually loaded into the computer and are resident until it is turned off. A DOS also contains a variety of utility programs to copy files, backup disks, etc.

Data Base - A program or group of programs that arranges, sorts, and accesses information.

Data Entry - Typing information into a computer, or more specifically, Maxi Manager II.

Descending - The opposite of Ascending.

Docufile - A program which creates the Document Files used by Maxi Manager II in printing reports, labels, and form letters.

Document File - A file containing instructions and text for the Maxi Manager II Print Program. It contains plain text, PFF commands (the instruction set), and field variables. It can be created with DOCUFILE, a word processor, or the Document File Editor.

Field - A line of information in a record, In a mailing list, for example, ADDRESS might be a field.

Field Label - A name used to identify a field.

Field Label Variables - An element of a Document File which tells Maxi Manager II to take the data out of a field and print it.

File - A collection of data that is stored together on a disk. See File Name, File Name Extension.

File Name - A name used to label a file on a disk. File names follow this format: FILENAME/EXT.PASSWORD. The file name (preceding "/") may be up to eight characters long.

File Name Extension - Up to three letters in a file name which follow the "/".

File Name Password - A password assigned to a file to protect it. It follows the "." in a file name, and

may be up to eight characters long.

Filter - Used in searching, it determines if a record meets a certain condition.

Four-Up Labels - A sheet of mailing labels arranged in rows of four across.

Granule - A group of sectors on a disk. The size of a Granule depends on the DOS being used, but is usually 5 or 6 sectors per granule, and 1280 or 1536 bytes per granule.

I/O - Input/Output of data to/from your computer to another device like a printer, modem, disk drive, etc.

Idle Link List - A list of spare (unused) records that are linked together in the Key File.

Instring - Used when searching for a record that has a specified string (group) of characters anywhere in a field.
(ex.: Looking for JOHN using instring would find records with JOHNSON, JOHNNY, UPJOHN, etc.).

Key File - An index to your data base. The file tells the data base in what order to read your data.

Keyboard Variable - When printing, allows you to stop printing, input data from the keyboard, and then print it as part of the file.

Left Justify - Lining up text on the left.

MMSBASIC - The machine language sub-routines of Maxi Manager II. These routines handle data I/O, screen prompts, string manipulation, etc. These routines are stored in the DATAPLUS/CMD file.

Masked Search - Searching for a record in which user-specified data appears in a specific place in a field. You may mask off any data that isn't needed.

Menu - A listing of options for you to choose from within a program or group of programs.

Minimum System Disk - A disk which contains nothing but the most essential elements of the DOS. Unnecessary elements are removed to make as much room available as possible.

Multiple Filter Search - A search for a record that passes several tests.

Non-Form Letter - A letter that goes beyond a mere form letter because it is personalized with information from a data base.

Numeric - Any data containing only numbers.

PFF - Print File Function—the group of programs which control printing.

Parallel Port - An I/O port on your TRS-80 computer, generally used to connect a printer.

Password - A word assigned to a file to make it more difficult for unauthorized users to access.

Pointer File - See Key Files.

RAM - (R)andom (A)ccess (M)emory. Your computer's memory.

ROM - (R)ead (O)nly (M)emory. Your computer's memory that is preprogrammed by Radio Shack and is not available for user files.

Record - A single complete entry into a data base.

Report - An organized printout of data. Usually arranged in Columns and Rows.

Right Justify - Printing text on so the right margin is evenly

lined up.

Sample Data Base - Sample data provided with Maxi Manager II to be used in conjunction with the User's Manual to help users learn how to use the system.

Sector - A sub-division of a track or cylinder (usually 18 per track/cylinder).

Serial Port (RS-232-C) - An I/O port on a computer used to transmit data to other equipment like modems, printers, other computers, etc.

Smart Menu - A menu which remembers the last choices you made from it.

Sort - To arrange information in a particular sequence.

Spare Records - Unused or deleted records which are available for use.

Spread Sheet Program - A program which combines the functions of an electronic calculator and a columnar pad. Used to calculate projections, budgets, Income Tax, etc.

Word Processor - A program that is used to manipulate text.
Helpful in creating and editing Document Files.

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